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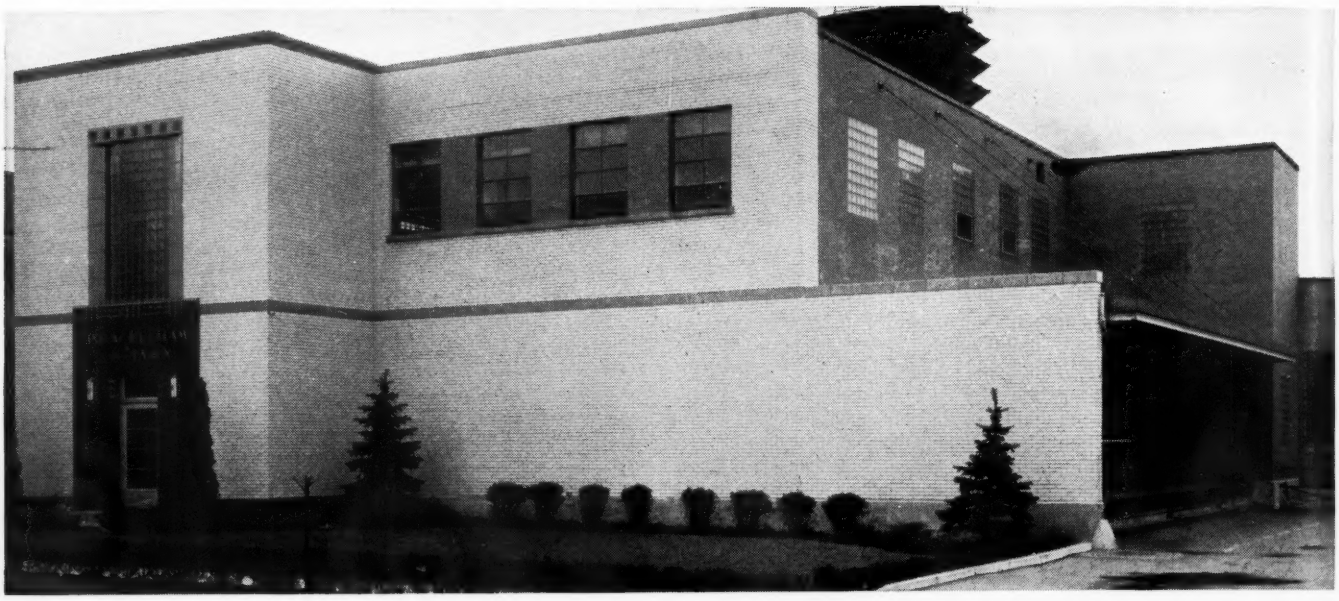
fueloil & oil heat



B & G *Hydro-Flo** HEATING

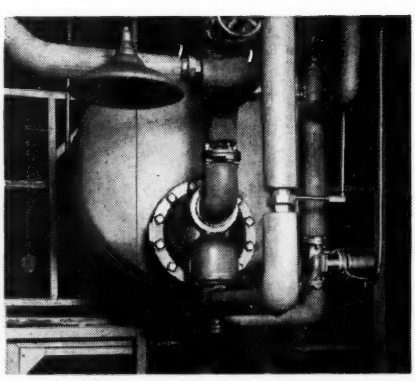
performs three distinct duties in this modern plant

GROWING use of B & G *Hydro-Flo* Forced Hot Water Heating for industrial applications is well illustrated in the plant of the General Ice Cream Corporation, Schenectady, N. Y.

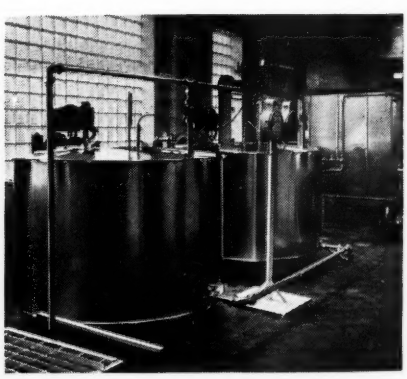
The system is ingeniously designed to perform three distinct duties. It heats the building . . . supplies hot water for pasteurizing cream and milk . . . and heats the service water. The service water load is very heavy, being used for general sterilization and for heating chocolate-melting kettles.

A hot water conditioning unit furnishes heat to the main office, located directly above the sub-zero hardening room. Locker rooms, loading docks and other departments are kept at a temperature best suited to occupational activity by individually controlled heating zones.

The operating versatility of B & G *Hydro-Flo* Heating is matched by its fuel economy . . . because water as a heating medium can be accurately controlled to avoid the usual causes of fuel waste.



B & G Indirect Water Heater with B & G Booster Pump for circulating hot water from the boiler to the Heater. This arrangement provides large volumes of hot water at minimum cost.



The pasteurizing vats are heated with water pumped directly from the boiler. Vats must be heated from 45° F. to 165° F. in approximately 30 minutes.

Ideal employee comfort conditions are maintained by the accurate temperature control possible with B & G *Hydro-Flo* Forced Hot Water Heating. The heat supply is smoothly adjusted to every change in the weather—no over or underheating.

*Hydro-Flo** Heating

BELL & GOSSETT COMPANY

Dept. BC-7, Morton Grove, Illinois

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Names in the News

R. J. Clark, Clearwater, Fla., has been named manufacturers' representative by Nu-Way Corp., Rock Island, Ill. In making the announcement, O. K. Gipple, Nu-Way's sales manager, revealed he will operate in Florida and southern Georgia. Mr. Clark is head of the R. J. Clark Equipment Co., Inc., with headquarters in Clearwater.

M. R. Waddell, industrial and public relations director, Black, Sivalls & Bryson, Inc., Kansas City 6, Mo., was elected a vice president, National Industrial Advertisers Association at its June annual convention in Buffalo, N. Y. He also was named membership chairman. As vice president, Mr. Waddell will represent the Central Middle West on the executive board of the N.I.A.A., oldest and largest group of advertisers in the country. He was a charter member and first president of the group's Kansas City Chapter and for the second successive year has been elected to represent it on the national board of directors.

Maurice H. Thomas has joined L. J. Mueller Furnace Co., Milwaukee 7, Wis., to cover the states of Indiana, Ohio, West Virginia and Kentucky. Formerly associated with Plumbing Supply Co., Evansville, Ind., Mr. Thomas' experience in the sale of heating equipment dates back to 1933, during which time he has been concerned with many leading lines of heating and air conditioning equipment. For the pres-

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fueloil & oil heat

AUGUST

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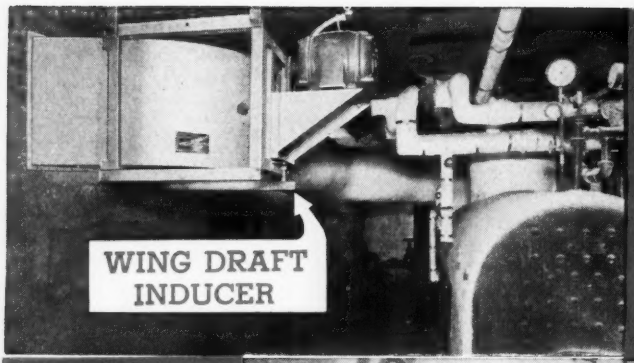
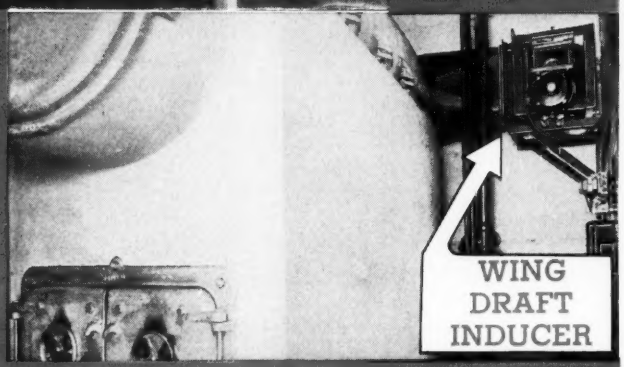
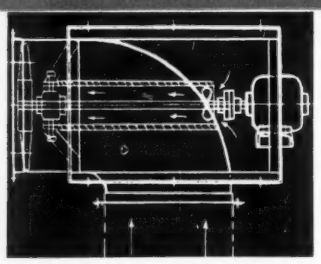


(Left) Wing Draft Inducer installed in breeching, merely replacing standard elbow

(Right) Wing Draft Inducer installed in elbow of breeching operating automatically with oil burner



How to Insure Positive Draft



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The Wing Draft Inducer provides a means for furnishing positive, uniform, adequate draft for low pressure heating plants without the need for tall, unsightly, expensive stacks.

It permits operating at high efficiencies without regard to weather conditions.

Thorough and efficient combustion with high CO_2 content is assured. Smoke, gas and explosion hazards are reduced or eliminated.

L. J. Wing Mfg. Co. **154 West 14th Street, Dept. FO, New York 11, N. Y.**

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WING

Wing DRAFT INDUCERS

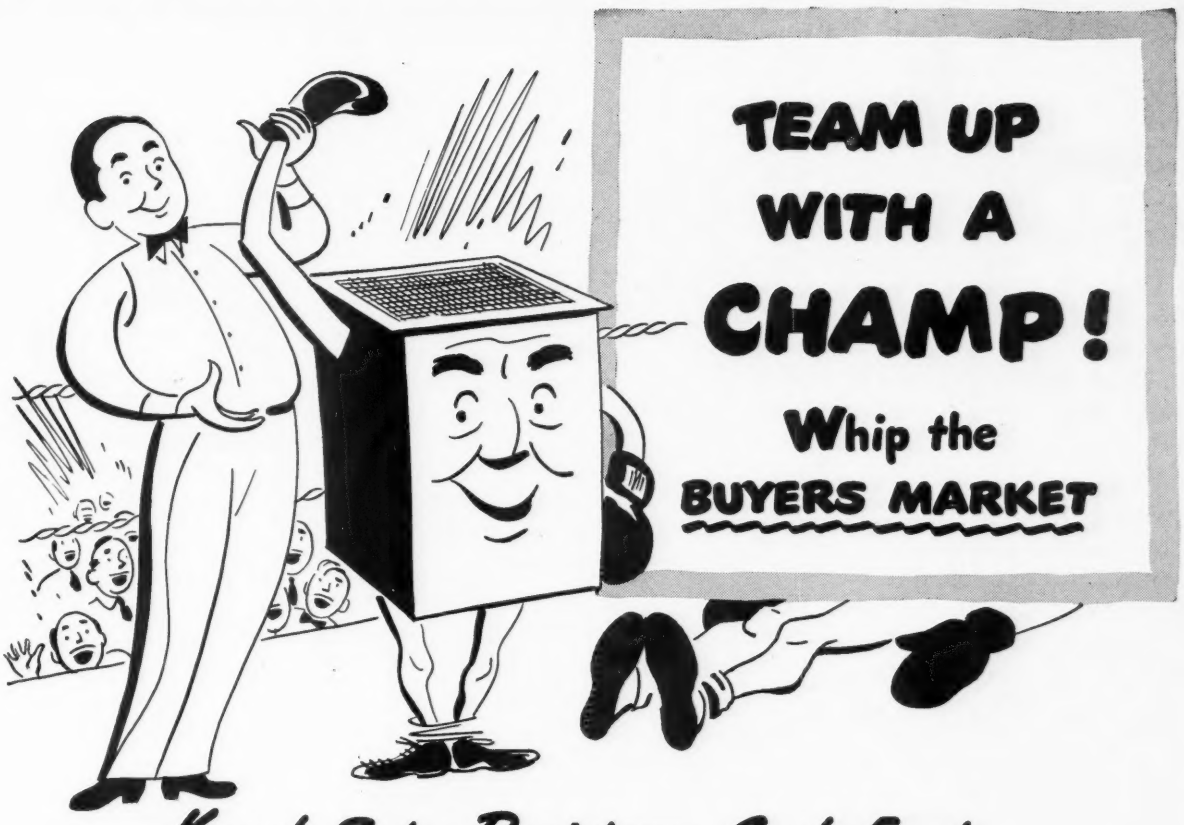
ent he will maintain headquarters in Evansville, Ind., but expects to move to a more central location in his territory.

H. Dale Cook has been named manager, Industrial Control Sales Div., Perfex Corp., Milwaukee, Wis., succeeding A. B. Meeg who recently left the company to join Bell & Gossett. Mr. Cook will handle organization and activation of the Perfex program for sales and distribution of industrial controls and instruments. Prior to joining Perfex in 1944, he was with General Controls, R. L. Deppmann Co., and before 1937, Minneapolis-Honeywell.

John J. Thurston, who has been associated with Wayne Home Equipment Co., Inc., Fort Wayne, Ind., for 18 years, has formed Thurston, Inc., New York 61, N. Y., and has been appointed direct factory representative for the New England states. He will be assisted by William and James Thurston to provide merchandising assistance to New England wholesalers of the entire line of Wayne Home equipment.

John R. Ford, associated with the company for the past nineteen years in various capacities, has become general sales manager, Jefferson Electric Co., Bellwood, Ill. He has been representative for the company in Milwaukee and the Northwest area with headquarters in Seattle. In 1944 he returned to the factory in charge of material procurement for war contracts and since the end of the war has operated as sales representative in the Chicago territory.

Guy A. Voorhees, application engineering director, National Warm Air Heating and Air Conditioning Association, Cleveland 14, Ohio, was assigned the additional duty of Technical Secretary at the group's recent semi-annual meeting. As such he will coordinate committee investigations and activities. On June 5 Mr. Voorhees received an honorary degree in mechanical engineering from Michigan State College, in recognition of his work in conducting the Indoor Comfort Conference series, sponsored by the Association.



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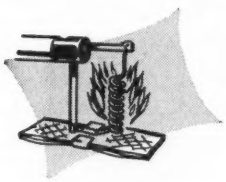
H. C. LITTLE IS THE WINNER!

In the competitive fight for consumer dollars, H. C. Little gives you a sales story with a PUNCH. If you like *selling,* you'll like selling *H. C. Little.*

Back in those prewar days when the buyer's market was *really* a buyer's market, H. C. Little dealers *prospered.* They're doing it again—and so can *you!* Who couldn't, with all these...

SALES FEATURES THAT PACK A WALLOP!



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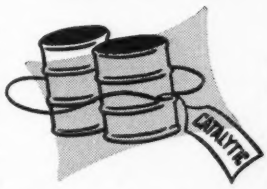
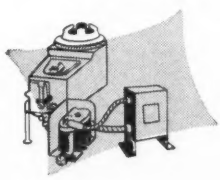
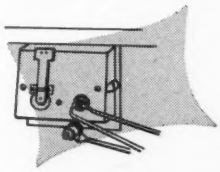
Automatic Operation With Exclusive H. C. Little Electric Ignition—No Pilot Light



Efficient Combustion With Catalytic Oil
Exclusive H. C. Little "Catalytic Heat Control" Now Standard Equipment and Available for Modernization of Existing H. C. Little Installations



H. C. Little Burner with Exclusive, Patented Elongated Design—No motors, no blowers, no moving parts to wear out or need service.



Exclusive H. C. Little Quick Starting Control—Operates automatically to admit additional air for quick, easy starting.

IF YOU LIKE SELLING— YOU'LL LIKE SELLING H. C. Little

H. C. Little Burner Company

SAN RAFAEL, CALIF.

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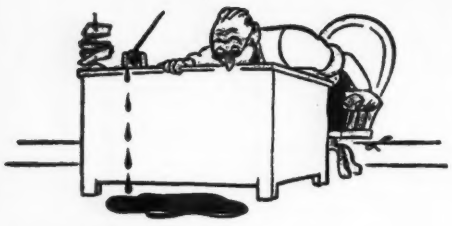
FACTORY REPRESENTATIVES IN 18 PRINCIPAL CITIES

fueloil & oil heat



Editorial Leaks

The oil industry lost ground in the first six months of the year. Sales of its four principal products, says the *New York Journal of Commerce,* were 4/10 of one per cent below last year.

Gasoline, fair-haired, was up seven per cent, but the three fueloils . . . kerosene, distillate and residual, hauled the line down to a minus comparison. The refiners are again reminded that the fuels are capricious, giving far more loyalty to will-o-the-wisp weather and profit-conscious marketers, who keep empty tanks, than to the cracking towers just bursting to spill them out.

◈

New York clerk Richard Estes was being examined by a doctor to see why he was that way when he suddenly lit out for the basement, jerked open the door of an oilboiler and plunged in head first. The fire was out so when the doctor and Estes' roommate retrieved him by the feet they discovered that it hadn't been out long and there were a lot of burns to be cared for along with a case of alcoholism at Roosevelt Hospital. Next morning when the effects wore off but not the burns, Estes probably cursed the day he put in oilheating. It's of no use to a man who wants to do away with himself. Gas has been the time honored fuel for hari-kari. Oilheating concedes the point.

◈

1949 A.D. started with a lot of hesitation and uncertainty in the oilheating industry. Folks had been frightened by oil supply publicity for going on two years, the future of gas heating looked brighter with the many new pipelines being dug under, and the dealers had been partially deflated by having every convention speaker of 1948 tell them that they had gone to seed and forgotten how to sell.

The month of January didn't help. New business (oilburner installations) was 21 per cent below 1948 when people had supposedly been scared to death and about to freeze.

The corner turned in February and it has kept on turning every month since. The half year is over and the 196,450 burners installed were almost 30,000 above 1948 . . . more than seventeen per cent.

There have been indications that the rate of gain is growing, that the last half of the year will show a much more pronounced upswing. If we leave January out of the first half the gain rate for the other five months was 28 per cent. The second half should do that well. Oilheating has what it takes for quick recovery, once the malignancy has been uprooted. We bruise easy, heal quick.

Oilburner service man John France up in Somerset, Mass., has a sixteen year old daughter, Shirley May, who swims. On a recent Sunday she swam from New York's Battery to Coney Island. It should have been only ten miles but she found dirty water in the Narrows so Shirley detoured another four miles out and around to keep it clean.

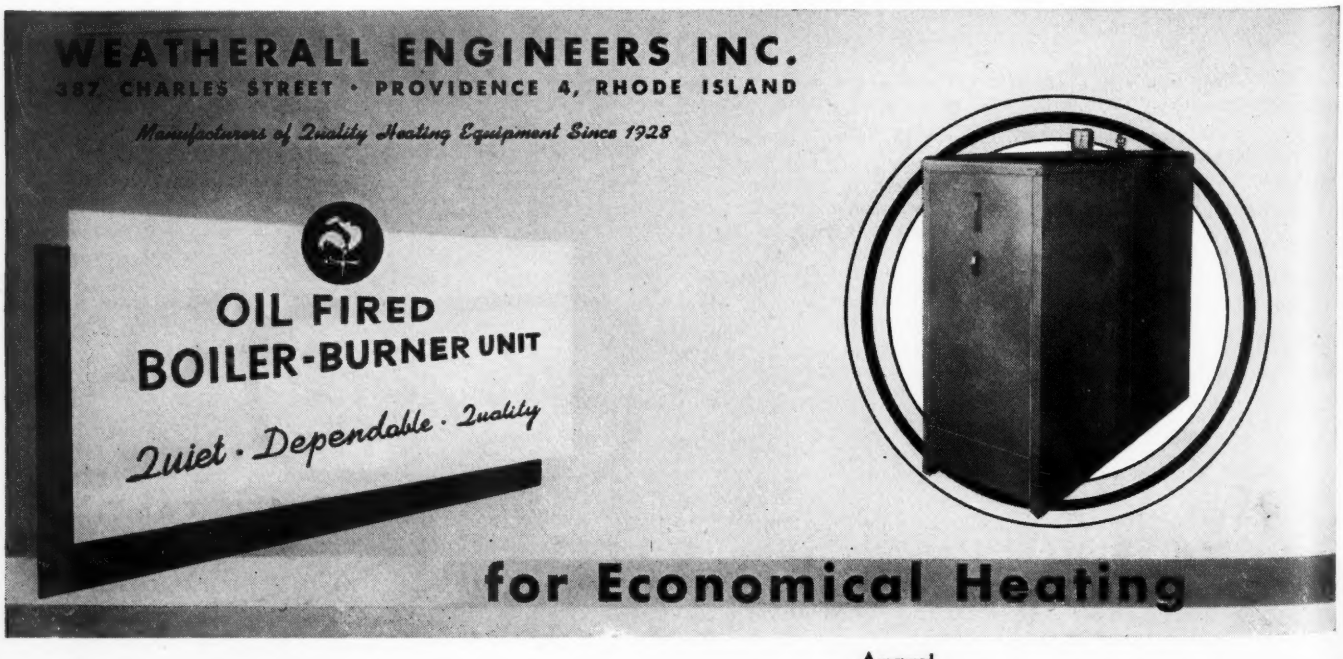
Sometime in the first half of August Shirley plans to swim the English Channel, with papa France alongside in a boat handing her chocolate bars. It's hard to find a link between oilburner service and channel swimming but it's a change from nozzles and Orsats.

◈

The oilheating industry is the focal point in a serious problem faced by oil refiners. The problem is going to be solved, the troubles removed, but not without refiners taking some very definite steps and taking them soon.

Heating oil will be short if we go on as we are. At a luncheon discussion of this situation with Messrs. Brown and Connolly of the Jersey Company, they were asked to set forth their company's views and these appear in the article, "Responsibility for Heating Oils," in this issue.

Because of the serious implications in the subject, on July 26 we mailed 186 advance copies to the top level men of the oil industry. By calling attention in time to a situation that would become serious if neglected, the two writers have rendered a praiseworthy service.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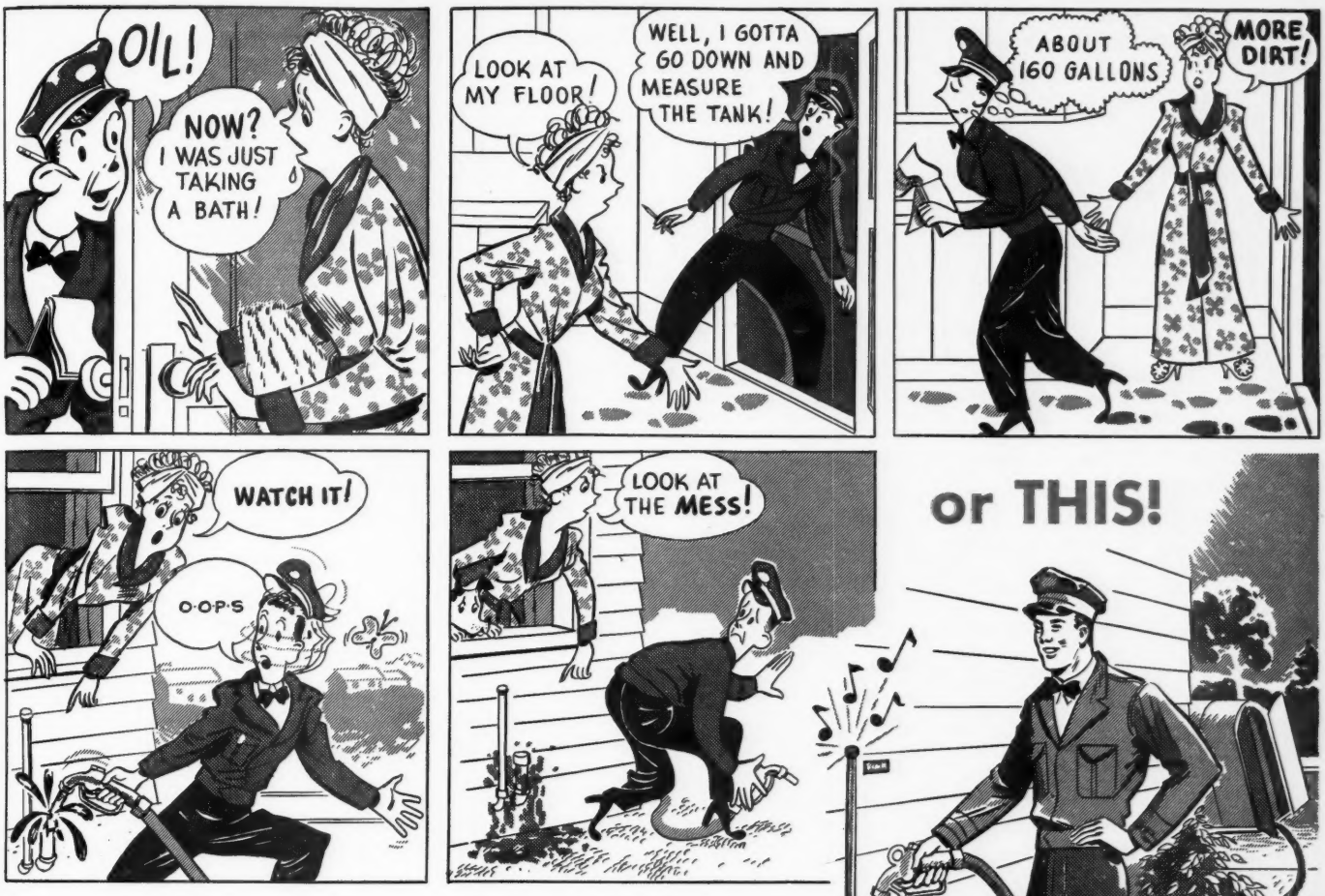

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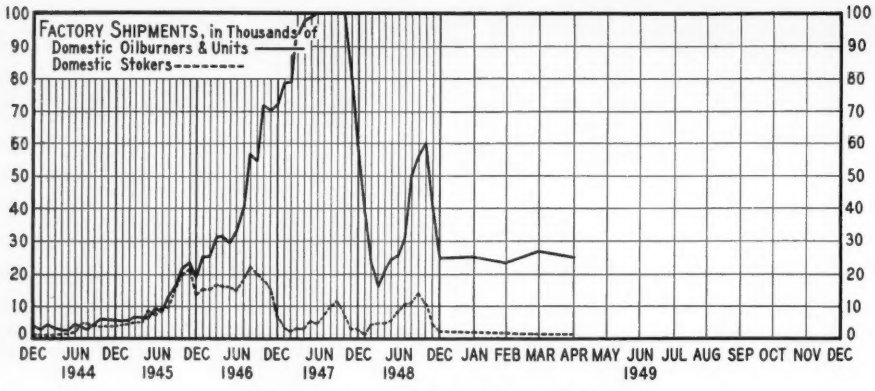
FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
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1944 1945 1946 1947 1948 1949

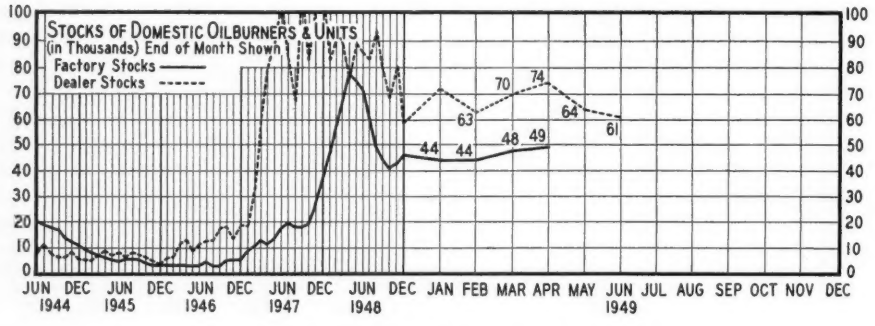
Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than the 152 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	MAY			FIVE MONTHS		
	1949	1948	Percent Change	1949	1948	Percent Change
Conversion	26,053*	16,490	+ 57.9	109,728*	83,534	+ 31.4
Boiler units	3,159*	2,628	+ 20.2	11,310*	10,270	+ 10.1
Furnace units	5,826*	5,411	+ 7.7	21,373*	28,685	— 25.5
All domestic	35,038*	24,529	+ 42.8	142,411*	122,489	+ 16.3
Commercial	1,704*	2,193	— 22.3	8,915*	12,046	— 25.9
Total	36,742*	26,722	+ 37.5	151,326*	134,535	+ 12.5

*Includes revised April figures.


STOCKS OF DOMESTIC OILBURNERS & UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
63 70 74 64 61
44 44 48 49
JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1944 1945 1946 1947 1948 1949

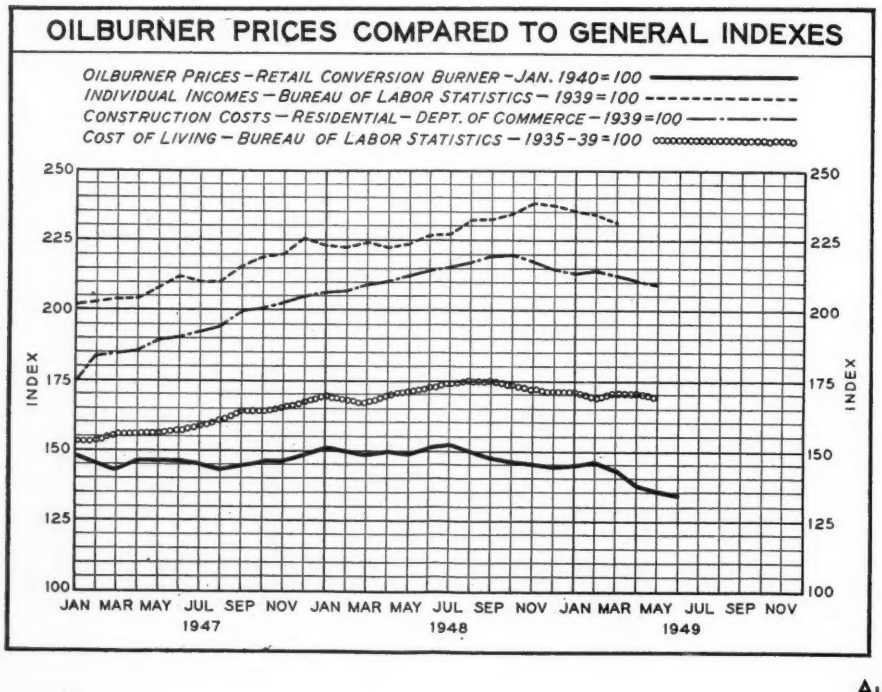
June Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS	BOILER-BURNERS	FURNACE-BURNERS
June Aver.	$326	$679	$566
May Aver.	331	698	578

Price Index: Conversion Burners: January 1940 is 100%

WHOLESALE				RETAIL			
June	129.5	Six months ago	141.6	June	134.1	Six months ago	144.4
May	131.6	Year ago	150.2	May	134.6	Year ago	150.5

OILBURNER PRICES COMPARED TO GENERAL INDEXES


OILBURNER PRICES – RETAIL CONVERSION BURNER – JAN. 1940 = 100
INDIVIDUAL INCOMES – BUREAU OF LABOR STATISTICS – 1939 = 100
CONSTRUCTION COSTS – RESIDENTIAL – DEPT. OF COMMERCE – 1939 = 100
COST OF LIVING – BUREAU OF LABOR STATISTICS – 1935-39 = 100
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JAN MAR MAY JUL SEP NOV JAN MAR MAY JUL SEP NOV JAN MAR MAY JUL SEP NOV
1947 1948 1949

Oilheating Trends

JUNE INSTALLATIONS of domestic oilburners and units are estimated at 54,761, a rise of 23% over the 44,533 in the same month last year. These installations were divided: New homes 16,209; Replacements of old oilburners 5,640; Conversions from other fuels 32,912.

Total installations for the first half of the year are estimated at 196,450 compared with 167,948 in the first six months of last year . . . reflecting a gain of 17%. The six months' total was divided by types of installation as follows: New homes 61,918; Replacements of old burners 32,217; Conversions from other fuels 102,315.

In the years before the war when the oilheating industry had a fairly stable seasonal pattern the first half of the year normally represented 33.5% of the total year. Perhaps the industry is back to its old seasonal pattern by now. If so, the installations thus far would point to a total for the year of 586,000.

BURNER STOCKS: Estimated stocks of domestic oilburners and units in the hands of dealers on June 30 were 61,297, continuing the down trend of the past few months. Dealers are obviously playing it close to the chest expecting still lower prices. How these can materialize is hard to understand in view of the price relationships shown on the new chart. Factory stocks on April 30, the latest available data, were 49,317, the highest point since August of last year.

FUELOIL STOCKS: Bulk storage tanks for No. 2 or 3 oil of fueloil distributors in the area East of the Rockies were approximately 30% filled on July 1 compared with 53% on the same date in 1948. On the other hand, storage of kerosene and No. 1 oil made a more favorable showing this year than last . . . 50% now versus 42% a year ago. The table shows estimated amounts of No. 2 or 3 oil that the local marketers were holding on July 1. It would be possible to have this total storage capacity as much as 80% filled if fueloil men were convinced that they could save money by doing so. This would allow another 10 or 12 million barrels to be advanced from refineries and terminals to local destinations. It is again

significant that these local tanks are not being filled even though 72% of the reporting fueloil men have been guaranteed against loss through price breaks to October 1.

Fueloil Distributors Bulk Stocks

No. 2 or 3 Distillates

	Storage Capacity (Barrels)	*Stocks July 1, 1949 (Barrels)*
New England	3,229,740	742,840
Mid-Atlantic	12,026,659	4,509,997
South	1,085,987	185,704
Midwest	5,450,733	1,526,216
East of Rockies	21,793,119	6,964,757

No check was made this month of consumer fill-ups but it may be recalled that last month five-sixths of the fueloil distributors reported that they were going ahead making deliveries on their keep-filled contracts without bringing the price matter to the attention of customers. The remaining one-sixth were asking permission before making these deliveries.

Major suppliers have been taking steps to stimulate consumer fill-ups as well as dealer tanks. It might have been better to have ignored the consumer relationship and given the summer discount only to dealers . . . the additional half cent spread would be rather attractive bait to fill dealer tanks if it didn't have to be passed along to the consumer.

There is something strange about the way distillate heating oil is backing up in the refineries and terminals to the point where the oil industry is becoming concerned over having enough fall stocks. In other words, refineries are choking down their distillate output because they are loaded. It is clear that while local bulk stocks could be much higher they are only about 5 million barrels below a year ago and from all observations consumer stocks are not off by more than three or four million barrels. The oil industry must be badly short of storage space when an undelivered eight or nine million barrels can choke things up. This is particularly true when it is recognized that the amount represents only three per cent of annual demand.

BURNER SALES OUTLOOK: In the opinion of dealers reporting from all sections of the country, oilburner installations for the full year 1949 will be about 14% above 1948, as things look now. They are less optimistic than three months ago when they predicted that the year would see a 24% rise and six months ago when they expected installations this year to be about 19% above 1948. The outlook is by no means the same in all sections of the country. Mid-Atlantic dealers anticipate an improvement of 37% and New England dealers 6%. When we get away from the Eastern seaboard dealers are expecting a decline from 1948 . . . a 6% drop in the Midwest and 3% on the West coast. Now that the first half of the year has already chalked up a 17% gain, dealers are definitely on the conservative side.

GAS COMPETITION: An indication that dealers throughout the country are becoming more concerned over gas competition is seen in their prediction that gasheating installations for the country as a whole will run 16% above last

(*Continued on page 127*)

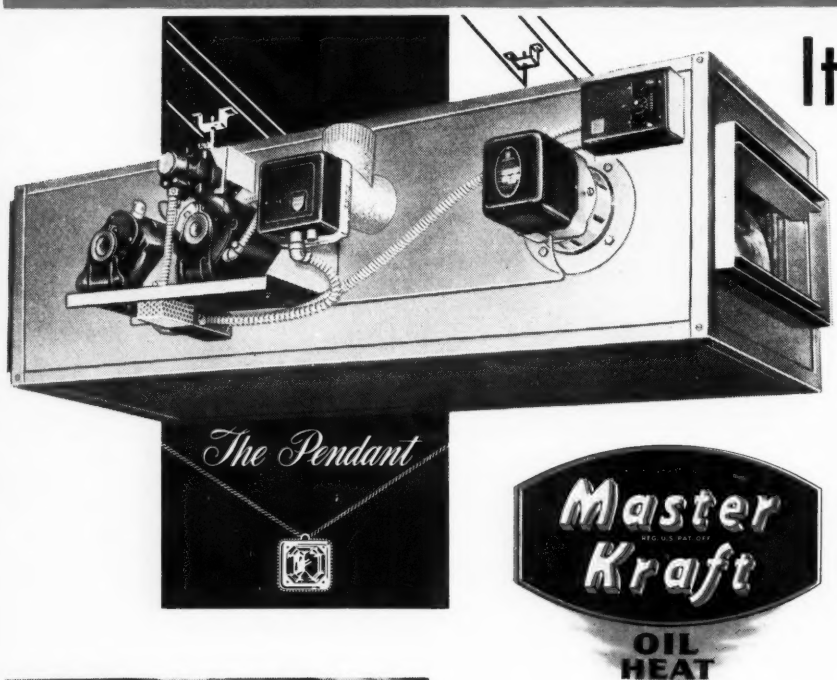
Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
	June		6 MONTHS		*June*		6 MONTHS	
1949	*1948*	*1949*	*1948*		*1949*	*1948*	*1949*	*1948*
73	..	..	..	Albany, N. Y.	..	..	..	..
636	335	2362	741	Baltimore, Md.	419	639	1123	2428
..	..	..	..	Binghamton, N. Y.	8	19	53	48
..	..	..	..	Bloomfield, N. J.	6	8	30	40
..	..	..	..	Boston, Mass.	34	33	178	171
81	49	322	330	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, N. Y.	45	42	157	162
..	..	..	..	Des Moines, Ia.	102	112	518	475
..	..	..	..	Detroit, Mich.	1249	772	5090	4146
44	26	219	247	Elizabeth, N. J.	1	4	19	9
19	35	115	91	Freeport, N. Y.	..	..	..	..
..	..	..	..	Greenwich, Conn.	18	24	85	119
..	..	..	..	Hackensack, N. J.	5	6	26	30
48	79	513	468	Hartford, Conn.	..	..	..	..
38	16	127	61	Irvington, N. J.	4	3	15	32
..	..	..	..	Lynn, Mass.	15	31	78	79
59	..	..	..	Meriden, Conn.	..	..	..	..
332	151	1395	758	Milwaukee, Wisc.	170	226	..	970
49	54	348	478	Minneapolis, Minn.	183	151	689	650
17	17	93	114	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	..	6	..	7
57	25	169	89	Mt. Vernon, N. Y.	..	..	..	..
178	..	..	..	Newark, N. J.	..	..	..	..
53	43	461	348	New Bedford, Mass.	..	..	..	..
95	26	202	153	New Haven, Conn.	..	..	..	..
..	0	..	0	New Orleans, La.	..	..	..	..
27	10	111	66	New Rochelle, N. Y.	5	3	30	44
..	5324	..	29,180	New York City (total)	..	..	..	..
..	5006	..	27,191	Brooklyn-Queens	..	..	..	..
496	318	2380	1989	Manhattan, Bronx, Rchd	..	..	..	..
136	130	624	665	Norfolk, Va.	112	43	380	305
..	0	..	5	Oakland, Calif.	..	..	..	..
..	93	..	556	Omaha, Nebr.	..	129	..	409
16	13	64	60	Orange, N. J.	..	1	..	7
24	30	135	110	Passaic, N. J.	..	..	..	..
80	46	300	180	Paterson, N. J.	6	14	50	50
951	508	3095	2051	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	8	9	36	44
22	35	127	129	Portland, Me.	16	20	63	84
532	549	2942	2773	Portland, Ore.	160	129	996	958
28	8	70	61	Poughkeepsie, N. Y.	..	..	..	..
50	35	251	254	Providence, R. I.	15	35	75	97
..	..	..	..	Reading, Pa.	3	6	21	18
31	53	365	361	Richmond, Va.	80	108	391	594
212	257	944	754	Rochester, N. Y.	..	..	..	..
25	30	103	115	Rockville Center, N. Y.	9	40	53	114
20	23	121	86	Salem, Mass.	7	5	54	31
..	105	..	644	St. Louis, Mo.	49	53	234	231
100	40	714	509	St. Paul, Minn.	..	104	..	474
76	78	260	418	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Wash.	163	..	779	..
..	..	..	..	Springfield, Mass.	29	47	237	288
50	26	203	222	Stamford, Conn.	..	..	..	..
71	..	..	..	Syracuse, N. Y.	39	..	172	..
..	..	..	..	Trenton, N. J.	1	4	53	15
..	..	..	..	Utica, N. Y.	8	29	32	68
74	119	425	566	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	11	15	58	78
21	22	82	93	White Plains, N. Y.	14	8	45	54
69	66	387	354	Wilmington, Del.	19	11	..	79
153	149	619	538	Worcester, Mass.	..	..	..	..
51	41	193	124	Yonkers, N. Y.	..	..	..	..
4713	3442	20,841	15,846	*Totals*	3207	2649	10,869	11,462
+36.9		+31.5		*Percent Change*	+21.1		— 5.2	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

New Master Kraft

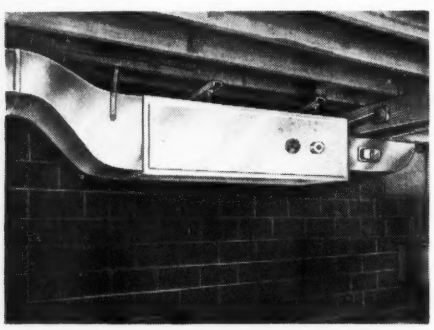
REG. U. S. PAT. OFF.



It hangs up . .

Here is the new Master Kraft suspended "package of heat." The Pendant or suspended model, shown at left, is a compact heating unit with a thousand and one domestic and commercial sales possibilities. Hang it anywhere a unit heater is required. As you can see in the smaller picture at left, this is a compact new Warm Air Conditioner that fits right up against the cellar joists—off in a corner—out of the way—leaving the floor space entirely free. Also may be installed in the attic, or in a crawl space beneath the house, or *stood* in a utility room!

Master Kraft
OIL HEAT



View of an actual installation in a six-room home.

In the view above, note that this unit contains two motors, has a full pressure atomizing burner, actually built into the unit (definitely not a conventional "hang on" burner). The burner combustion head—an extremely simple yet finely engineered device, is on the extreme right end. Filter is located in the extreme left end of the unit.

STAINLESS STEEL: The heart of this handsome Master Kraft Model VCF Warm Air Conditioner is made of 40 pounds of heavy gauge stainless steel, to resist the ravages of time—to give this unit extremely long life and reliability in service.

The ways that the Master Kraft Model VCF-75 suspended "package of heat" can be used are so numerous that it would be impossible to list them all here. Here are just a few of the many, many uses in which you, as a heating dealer, may use this simple and compact heating unit. Of course, it will do a superb job of heating a small type home, but the more numerous uses of this "package of heat" are in the commercial line. For example, can be stood or suspended in garages or filling stations, temporary buildings, super markets, banks, offices, factories, stores, airplane hangars, churches, playhouses, theaters, auditoriums, hotels, tourist cabins, trailer camps. This unit has an extremely attractive price tag . . . has so many uses that Master Kraft dealers will do a land office business with it. Act now to get full details of this sensational new Master Kraft Suspended Unit TODAY! Just mail that coupon NOW.

HARVEY-WHIPPLE, INC.

A PIONEER IN AUTOMATIC HEATING FOR 26 YEARS

SPRINGFIELD 1, - MASS.

Top Rating for Oilheating

A View of the Industry by Top Sales Rating Analysts

by
Peter B. B. Andrews*

FEW INDUSTRIES in the United States have so clear-cut a favorable prospect for future sales as the oilheating industry. The domestic oilburner potential of orders, many of which require some pre-war type of selling to crystalize the desire into an order, is estimated by the writer and his future-sales-rating associates to approximate $4,000,000,000 — enough to keep the industry booming for a decade. This estimate is without consideration of new housing; current and proposed new residential construction will add to this backlog.

In view of this prospect, based on natural interest (heightened by expected increases in sales promotion) in oilheating equipment and the expectation of plentiful fueloil supplies, it is not difficult to realize why the rating of five stars is given the oilburner industry by Future Sales Ratings, nationally known rating service which covers the 100 leading American industries. That is the highest rating any industry can get, and it signifies a comparatively outstanding level of activity over the next 12 months.

Future Sales Ratings are determined by a group of over 140 Government and industrial experts, under the author's supervision, and the findings are published quarterly in *Sales Management*.

In talking to these authorities, whether in Government or private industry, the writer has found extensive use of the very excellent figures of FUELOIL & OIL HEAT Magazine; many, in fact, regard these data as the statistical bible of the industry. Accordingly, the writer will avoid going into extensive background data on figures, which already have been so ably presented to FUELOIL & OIL HEAT readers.

*Former Industrial Economic Adviser United States Government.

The foremost consideration in the Board's optimistic appraisal of the oilheating industry is the impressive transition of the petroleum industry from a state of tight supply to one of ample supply. The oil industry has solved the problem of shortages by its far-sighted gigantic program for improvement of refinery and other facilities, and distillate stocks now appear more than adequate for the foreseeable future—representing a strong supply foundation for the sale of new fueloil installations.

Plenty of Oil For All

Great increases in reserves of petroleum on this continent and in foreign fields add up to plenty of oil for all, including any international emergencies which now appear logical. The standby resources of synthetic oil—admittedly not far along at present—are overwhelming; apropos, it is noteworthy that the coal and lignite deposits of the United States, estimated at 3.2 trillion tons, could supply all liquid and solid fuel requirements at present rates of consumption for the next 1,000 years. Oil shale deposits, moreover, are estimated at 92 billion barrels of recoverable oil—enough for almost 50 years' consumption. Synthetic fuels from natural gas, already a reality, represent an additional worthwhile supply.

These are interesting largely from the extreme emergency viewpoint; suffice it to say that there will be enough natural oil for many years to come to justify definitely the burying of that troublesome bogey—shortage.

With a green light on supply, the oilburner manufacturing industry is off to a strong start this year. This alert trade enlarged its advertising and selling appropriations for 1949 and should enlarge them still further to take advantage of the very great replacement potential in homes with obsolete coal-burning furnaces, as well as to insure oilburner installations in new homes. The untapped field is tremendous, with only 3,975,773 oil-fired installations in the United States as of December 31, 1948. This is only about 10% of the nation's homes, at least half of which represent logical sales targets for oilburners.

As matters shape up now, 1949 should easily be the second biggest year in oilburner sales history. Total burner sales should be not far from 600,000, a figure more than 30% above the 455,245 installations in 1948. As usual, the Mid-Atlantic Area should lead, taking about 250,000 burners. The Midwest will be next with about 180,000 burners, New England third with approximately 100,000 burners, and the South and West taking about 35,000 burners each.

This, of course, will be a standout performance among American industries in a recession year, so-called. Actually, the writer believes that pessimism over the general business prospect has been decidedly overdone. One of the most important factors is that financial strength characterizes the entire economic system. This is true of farmers, urban consumers, business and financial institutions.

Wherewithal for buying certainly is present. Despite some sag in the general economy, national income is holding up well (reflecting a higher wage scale than last year at this time) running near 221 billion dollars annually—not far from the all-time record rate.

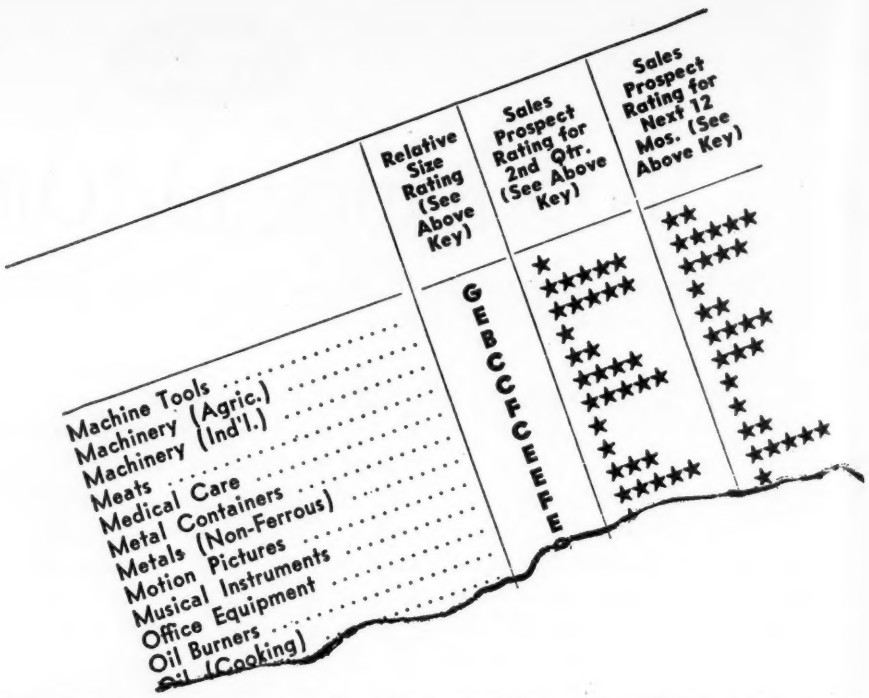
Moreover, individual savings are enormous, being at a new high figure. The total of cash and bank deposits held by individuals at the end of 1948 was 130 billion dollars, and Government securities totaled 70 billion dollars. Of the total of cash and deposits, 24 billion was in the form of currency, 56 billion was in time and savings deposits, and 50 billion was in checking accounts.

There indeed is the wherewithal! In fact, there is enough cash alone (not to mention securities and savings and checking accounts) to buy out the total output of oilburner manufacturers for the next *50 years or more.*

Considering these data and the greater availability of materials for manufacturing oilburners, it boils down pretty much to a matter of getting out the advertising and promotional guns to unloosen some of this huge store of cash to buy oilburners.

While consumer hesitation in buying has brought about a psychological change in markets, the basic need for oilburners certainly exists. Among the major factors in the anticipated long term uptrend, besides the huge backlog of individual savings which are over three times greater than in 1940, are the facts that in the last eight years the number of marriages in this country totaled 15,789,000, while home building starts were only 4,654,300 in this same period. Piling up of the demand backlog is shown in the accompanying table.

The figures graphically portray the inevitability of demand for homes and the goods that go with them, including oilburners. It will be observed that the cumulative difference between homes started and marriages is 11,134,710, an all-time, record-breaking backlog of demand! The aggregate figures are not entirely applicable to potential demand, since some of these marriages break through divorce. Nevertheless, a very large percentage of these marriages have yet to be satisfactorily housed and outfitted, and the *pressing fact of the need* is there. Practically every married couple would like to have a private home and, where these homes might be in oilburning areas, the majority would like to have them equipped with oilburners. In instances where action depends on favorable financing, it will be increasingly easier from now on, according to my Washington information, to arrange such financing. Housing needs still are recognized as one of the greatest problems of the day, and the urgency to push through housing aid is likely to increase rather than diminish.



A section *from the page in the April 1, 1949 issue of "Sales Management" showing the most recent rating of oilburner sales prospects for the quarter and the next year.*

Prices are coming down, and prices, of course, are an important consideration, but the writer believes that the price argument has been extensively exaggerated as a sales factor. One cannot brush aside the monumental pile of the nation's savings. *The money is there.* A return to a normal position, in fact, would entail the expenditure of about 100 billion dollars of the country's individual savings.

In spite of the concern expressed by some, consumer debt still is very low in relation to both income and savings. Consumer long and short term debts combined are about 32% of aggregate individual savings, compared to 99% in 1940. Consumer purchasing power, moreover, is at least 50% over 1940 in terms of goods and services rather than dollars. Discretionary buying power (that remaining after essentials have been provided) is four times that of 1940, with this buying power rising, as of this writing, because of many reductions in prices throughout the economy.

A further bulwark of present consumer buying power is represented by the "floors" which have been established under the nation's economy, designed to absorb any extra weight of downward business conditions. These include unemployment insurance, welfare compensation, and Government funds accumulated for construction projects.

The 12 months ahead will receive extra stimulation as the G.I.'s large scale life insurance premium refunding gets under way soon, and E.R.P. spending (5.4 billion dollars authorized) and National Defense spending (15.9 billion dollars authorized) take place.

Moreover, business will receive strong support from net cash payments to the public of about 7 billion dollars in this period, since this many more cash dollars are likely to be paid out than taken in. It is significant that in the two years ended in March, 1949, the Government drew out about 12 billion dollars more from the stream of income than it paid into that stream in cash. Thus, the extra

	Home Building Starts	*Marriages (U.S. Total)*	*Difference*	*Cumulative Difference*
1948	928,000	1,815,000	887,000	11,134,710
1947	849,000	1,991,878	1,142,878	10,247,710
1946	670,500	2,285,539	1,615,039	9,104,832
1945	209,300	1,603,139	1,393,839	7,489,793
1944	141,800	1,452,394	1,310,594	6,095,954
1943	191,000	1,577,050	1,386,050	4,785,360
1942	356,000	1,772,132	1,416,132	3,399,310
1941	706,100	1,695,999	989,899	1,983,178
1940	602,600	1,595,879	993,279	993,279
Totals	4,654,300	15,789,010	11,134,710	11,134,710

stimulation of coming months is evident.

Some prophets of doom are emphasizing a situation of lower employment, but concern over the current unemployment total of about 3,000,000 is overdone when it is realized that even in good times an unemployment of 2,500,000 to 3,000,000 is necessary before selectivity can be exercised in hiring employees. An unemployment of at least 2,500,000, in fact, merely takes care of those who are changing jobs or shifting from place to place.

Many of these same prophets of gloom forecast for the post-war reconversion period an unemployment of over 10,000,000, which was grossly off the actual total of no more than 2,700,000. These data are noted to emphasize how wrong the pessimists can be and to help train readers' sights on the great sales potential ahead. In a great many cases, a little old-fashioned salesmanship, more than anything else, is required to convert an underlying desire into an order.

The oilheating business needs a healthy general economy, of course, to effect the greatest demand for its goods. Business over the remainder of 1949 will be good, compared with activity in most of the years of our history, even though it probably will not be as good as in 1948, which, it must be realized, shattered all records for gross national product and disposable personal income, the former approximating 255 billion dollars and the latter almost 193 billion dollars. The small decline likely from these levels in 1949 will still mark 1949 as one of the extremely prosperous years of this country's history. The nation's personal income so far this year is *ahead* of 1948!

On the basis of such reasoning as appears in the preceding paragraphs of this article does the Board of Editors of Future Sales Ratings try to look ahead, after finding conclusively in many years of experience that 99% of most statistics in active use are stale. These back statistics do not show what we will do; they only show what we have done, and to use them in steering the course of the ship of the oilheating industry is like sending the navigator back to the stern to look at the wake. It is a pleasure indeed, therefore, to have a majority authoritative foresight that the future looks good for the oilheating industry!

"It's not so much for myself, sir, as it is for the government. My income taxes are so pitifully small"

Promotional Program Studied at OHI Directors' Meeting

A COMPREHENSIVE program for oilheating promotion was outlined by T. A. Crawford, Chairman of the Public Relations Committee, to the OHI Board of Directors at its July 12 meeting in Virginia Beach, Va. The most significant single development was action taken to authorize L. A. Casler, Public Relations Counsel, to prepare a series of advertisements for use by local chapters, and other oilheating groups or companies, setting forth oilheating advantages. The estimated preparation cost of $6,000 was underwritten by a group of the manufacturers present, inasmuch as the meeting was short one director to have a quorum to be able to take official action.

The principal activity of the meeting was consideration of Crawford's presentation of numerous ways for undertaking oilheating promotion. In addition to developing a series of advertisements and offering mat services to the industry, Casler is also to prepare a group of direct mail pieces for dealers to use with prospects, a display layout for local home shows that would travel about the country and be loaned at cost to dealer associations, and also prepare dealer window displays and designs for painted billboards.

The OHI booklet, used at the Boston show, "Proved and Approved by Millions," is to be revised for a give-away piece at local home shows or for general prospect distribution.

Crawford further proposed that equipment manufacturers sponsor a national cooperative advertising campaign to raise a half million dollars annually. Quite a number of methods were explored. At Crawford's suggestion A. T. Atwill, the Institute's president, is to appoint a committee to look into ways and means and report at the Fall meeting. As part of the whole promotional discussion, it was suggested that the industry sponsor in summer months a tune-up campaign to bring the present oilburner installations up to peak efficiency, and another in late fall to help dealers get replacement business through the winter months. It was also recommended that the Institute sponsor a campaign for home insulation to help minimize fuel bills. It was pointed out that insulation manufacturers or their associations should be willing to cooperate.

Another suggestion by Crawford was that the Institute survey the Trade School situation in the country and establish through its engineering committee an accepted list of schools that would be made available to the distribution division for dealer members.

Other items or projects explored at the meeting included . . . Direct promotion by the Institute of its basic service textbook . . . In future, committees preparing reports shall mail copies of them to all directors a week in advance of meetings so that they can be studied before discussion . . . A Show Committee for the 1950 Philadelphia Exposition is to consist of T. A. Crawford, Jim Owens, Paul Addams, Fred Haab, and Lon Casler . . . Fenton Fisher, Chairman of the Membership Committee, reported six new members since the last meeting—U. S. Machine Corp., Lebanon, Ind.; Tru-Heet Co., Trenton, N. J.; Iron Fireman Mfg. Corp., Cleveland; Electrol Burner Mfg. Corp., Rutherford, N. J.; Boiler Engineering Supply Co., Phoenixville, Pa.; and National Tank Cleaning Co., Baltimore . . . The next board meeting will be held October 18, in Chicago.

A Plan for Sales

Commissions Scale Upward to Encourage Best Full-Time Effort

by
A. E. Coburn

SELLING, like baseball, pays off for that last supreme ounce of effort. The difference between the star performance and run-of-the-mill mediocrity frequently is in the continued trying to do that which could be skipped without criticism. The fielder who makes a spectacular shoestring catch would never be criticized for taking the ball on the first bounce. The salesman who makes just one more call after a hard day's work never would be fired if he skipped it, but in each case exceptional effort and enterprise will pay off in superior results.

In baseball the old "college try"—the hustle that marks a superb performance—pays off at the time contracts are signed late in the winter. In selling the extra effort pays off month to month. But selling, unlike baseball, carries no public acclaim; no headlines in the local papers. The star salesman finds his reward almost solely in his commission checks.

One of the chief problems in sales compensation always has been to find a sensible and equitable way to pay extra for extra effort. Such a plan must give the salesman incentive to hustle and still allow the dealer to stay within a reasonable percentage of the total for sales cost. The plan must recognize the abilities of various salesmen and pay off for both unit volume and dollar volume of business closed. It must pay the grocery bill month to month and must have those elements that keeps a man pushing for something extra for his added effort.

Such a plan has been announced by one dealer, though no claim is made for its perfection. In fact, its authors can point to weaknesses that may arise in the system, but they feel it is worth a serious trial.

Any oilheating salesman who works full time at the job should earn close to $5,000 a year, and proportionately more for greater-than-average skill or effort, according to James A. MacDougall, president of Automatic Heat, Inc., Philadelphia. This assumes the man is well trained and willing to work conscientiously. It is reasonable to expect such a man in good territory to produce at least 50 sales a year without straining himself. The object of any good compensation plan should be to encourage this "average" salesman to produce a sizable volume of business over and above his normal closings, and to pay him well for this additional business. It should keep the man interested in his job and anxious to stay with it. The cost of finding and training a man to the point of producing 50 sales a year is considerable, and once trained the dealer can afford to make the job interesting.

This, in brief, is the reasoning behind the new salesmen's compensation plan recently inaugurated by Automatic Heat, Inc., Timken Silent Automatic distributor in the Philadelphia area. The firm has dealers selling at retail on the fringe of its territory, but it sells oilheating equipment and fueloil at retail in the city and its immediate suburbs. The new sales plan is aimed primarily at producing business at the retail level. The plan is designed to help to sell 1,000 oilburners and units at retail this year.

The company's fueloil business, in common with many others in the East, was hit solidly by the oil shortage in the winter of 1947-48. When the company could not deliver fueloil, through no fault of the management, many of the customers went shopping, and some disappeared completely. Though this is a common experience of dealers along the Atlantic Coast, Automatic Heat is putting its chief effort on new business while trying to win back the old customers. New installations are a surer and more profitable way to build gallonage than fighting to woo customers away from their present suppliers.

James A. MacDougall

Any campaign to sell 1,000 burners and units at retail must start with a consideration of manpower. From a start at the first of the year with a nucleus of twelve experienced salesmen, the company had fourteen on the first of May with a combined oilheating sales experience of 152 years. New salesmen are being added as fast as promising candidates can be found and trained.

"We feel the average salesman should close a sale a week, and with some additional incentive, he will do better than that," Mr. MacDougall explains. "At 50 sales per man we'd need 20 salesmen to produce 1,000 new installations, but we think we can get that volume with 17 or 18 men if we can make it worth their while to make the additional effort. We believe it will be better to have fewer men producing more for themselves and for us than to load the sales force with 'average' salesmen. We would rather pay the cost of recruiting and training two or three additional men to our smaller sales force for producing the extra business."

The compensation plan is based chiefly on the salesman's dollar volume of business, though it is recognized that the number of individual installations are to be encouraged.

The average unit of sale on oilheating

equipment is $600, based on recent experience. Fifty installations a year expected of each man would make his dollar volume $30,000, which is each man's quota. A commission of 10% is paid on the first $15,000 of annual business; 12% on volume from $15,001 to $30,000; and 14% on all dollar volume greater than $30,000 in any year. These commission rates are not retroactive, but apply only to the business volume done in each bracket.

In addition to the commission arrangement, monthly bonuses of 2% are paid for equalling or exceeding monthly quotas set forth in the following table:

January	3%	$ 900.00
February	3%	900.00
March	7%	2,100.00
April	8%	2,400.00
May	9%	2,700.00
June	10%	3,000.00
July	8%	2,400.00
August	10%	3,000.00
September	17%	5,100.00
October	16%	4,800.00
November	6%	1,800.00
December	3%	900.00
		$30,000.00

Monthly bonuses are paid on sales reported in that month. However, a check is made at the end of the second following month, and any sales on which an installation has not been made are subject to charge back against the salesman's commissions. For instance, orders taken in May must be installed by the end of July to be allowed. Cases where a reasonable excuse can be seen for the delay in accepting installation will be given special consideration.

Besides the commission and bonus arrangement based on dollar volume of business, there also is a year-end bonus based on the number of Timken burners and units each salesman has sold. Men selling between 50 and 75 installations will receive $5.00 per unit. Salesmen with a volume of 76 to 100 installations during the calendar year will receive $7.50 per unit, and all men with more than 100 sales will get $10.00 for each installation. A bonus check coming after the Christmas shopping raid on the bank account should make any salesman bless the boss.

In addition to commissions and bonuses on equipment sales, salesmen are paid a quarter cent per gallon on all fueloil delivered to their accounts each year, starting June 1. Fueloil commissions are payable only to salesmen who are in the company's employ at the end of the oil year, May 31. A flat payment of $2.00 in addition to the quarter cent commission is paid for fueloil contracts from existing oilburner users who are not already Automatic Heat's customers. Such a customer must take at least 200 gallons before the account is free of possible charge back against the $2.00 paid for the contract.

It will be noted that all commissions and bonuses are on a sliding scale upward. This is designed to spur each man to his maximum effort and to encourage him to maintain his best effort throughout the year.

"We are trying to make it attractive for a man to give us his peak sales production on a year-around basis," Mr. MacDougall says. "We don't want the high turnover in our sales force that has been accepted as standard in the past. We want an adequate, full time sales force composed of prosperous, hard working men to whom selling is a career.

"Please don't get the idea we are overly generous," Mr. MacDougall warns. "We don't know how to get 1,000 retail sales this year without making it worthwhile for the men to dig out that much business. And the sales compensation setup is designed to get that business at reasonable cost. This program has been calculated carefully to include all sales and promotional expense. We feel sure the cost is reasonable for the effort we expect of our salesmen."

"Well, if you won't raise my pay, boss --- how about raising my allowance, dad?"

Gas Restrictions Lifted In Three Midwest Markets

NATURAL GAS FOR HOME heating will be readily available to all applicants for the coming season in St. Louis, Louisville and Cleveland, as a result of additional pipe line capacity being made available through new construction to be completed before fall.

The East Ohio Gas Co., operating in Cleveland and vicinity, has stated that its new supply can accommodate the heating of an additional 55,000 homes or about 20 per cent more than its present quarter million home heating customers. In St. Louis the Laclede Gas Light Co. has announced that it will convert all present users of 800 Btu mixed gas to straight natural gas by about November 1 and take on a lot of new homes to heat. The number is not officially mentioned, but it is estimated at around 20,000 new users. Louisville has lifted its two-year ban on new house heating installations, as long as the building doesn't require more than 1,666 cu. ft. an hour.

U. S. Department of Labor Fueloil Prices (May)

FIELD INVESTIGATORS for the Department of Labor monthly check prices of principal fuels in several cities in each section of the country. Getting retail quotations from various suppliers in each market, the prices are averaged and published. Those in the table that follows were taken May 15 (cents per gallon):

	Range	*No. 1*	*No. 2*	*No. 3*
Boston	13.73	13.60	11.10	..
Manchester	14.60	14.10	11.80	..
Portland, Me.	13.40	13.40	11.08	..
*Buffalo	14.34	..	12.62	12.62
**New York	..	..	10.59	..
Philadelphia	..	12.10	11.52	..
**Chicago	14.20	13.87	12.85	12.85
***Detroit	..	14.42	13.39	13.29
Milwaukee	..	14.30	13.30	13.30
**Kansas City	..	12.83	11.80	11.83
Minneapolis	13.97	13.73	12.68	12.73
**Baltimore	..	12.55	10.91	..
Wash., D. C.	..	12.80	11.10	..
Jacksonville	..	13.70	12.40	..
Norfolk	..	12.60	10.30	10.30
Richmond	..	12.90	10.70	..
Savannah	..	14.40	12.82	..
****New Orl'ans	..	13.84	11.84	11.84
Portland, Ore.	..	13.94	11.64	6.79
***San Francisco	..	13.70	11.38	6.70
***Seattle	..	14.77	12.65	6.99

*Price includes 1% sales tax.
**Price includes 2% sales tax.
***Price includes 3% sales tax.
****Price includes 3% tax on all fuels, and 1% per gallon inspection tax on kerosene and No. 1.

Responsibility for Heating Oils

Refiners Must Take Steps to Assure Next Winter's Demand

by

Dr. Courtney C. Brown*

and

J. W. Connolly*

IT MAY SEEM PREMATURE, during these hot days, to be worrying about the next winter's oil situation in the market east of the Rocky Mountains. Many observers, far from being concerned with the possibility of inadequate supplies, are preoccupied with what now looks like an over abundance of crude and of products, particularly of the middle fractions, which include kerosene, range oil and #2 heating oil.

At the half year mark, inventories of the four principal petroleum products east of the Rocky Mountains were about 36 million barrels over last year; crude inventories were about 39 million barrels more. Kerosene and distillate inventories in primary storage, have appeared to some observers, to be particularly heavy. On July 2, kerosene in primary tanks was about 5 million barrels, or 29% in excess of a year ago and distillate stocks were 17½ million barrels, or 47% ahead of a year ago.

Current Figures Misleading?

It's fair to ask "What's all the noise about?" When the industry has that amount of inventory in the hands of primary suppliers, and is further backed up by unused capacity in the producing, refining, and transportation phases of its business, how can there be concern about the ability of the industry to take care of any conceivable requirements that may come along next winter? In the opinion of some observers of the oil market, there is none. They foresee little or no chance of the reappearance of any of the difficulties that occurred in the winter of 1947-48.

But the story is not as obvious as it seems. One has to evaluate the figures in terms of past trends of the oil market to get at the real probabilities. The situation, in fact, is not without its troublesome aspects. The uncertainties relative to next winter arise out of two current factors—(1) secondary distributors of burning oils have not been taking delivery of their normal quantities of oil in their usual preparations for winter and (2) this failure to take delivery at the normal rate has made current demands against primary supplies look very weak indeed. In spite of price inducements and price protection offered by major suppliers, distributors have not as yet achieved the security of building adequate secondary stocks. The low level of demands made upon primary suppliers, in turn, has resulted in crude runs and crude production probably well below levels that would otherwise be desirable, or that will be required throughout the rest of the year.

Expressed in another way, the industry is losing production today which will be needed next winter. It is losing production not only because demands against primary suppliers are at an abnormally low level, but because primary suppliers do not have adequate storage capacity to accumulate all of the burning oil supplies needed for a normal winter.

This view is quite contrary to the school of thought which holds that we now have more oil in tanks than we need, and plenty of surplus capacity to call on later, whenever we should need it. Without further proof, an expression of concern over next winter's supply problems at this time looks like nothing more than a difference of opinion in the oil market; and this is just what every healthy competitive market should have. If it can be shown convincingly, however, that there are real dangers inherent in the position as it may develop next winter, steps can be taken now to avert those dangers, and the petroleum industry may be spared some pretty serious headaches.

The industry would be severely criticized if it found itself next winter in a position where consumer demands for burning oils were increasing at a rate that prevented the accumulation of a reasonable working inventory in distribution channels. It would not help the industry in its relations with the public if the requirements could be supplied at the refinery level only by the inducement of sharp price increases which the public might regard as excessive. One of the difficulties confronting the industry in the winter of 1947-48 was the inability to achieve and maintain adequate working stocks in distribution channels, with the result that there was the appearance of tight or short supplies throughout the industry, and run-outs actually occurred.

Two Main Reasons for Concern

The present concern for the industry's position next winter rests essentially upon the premise that burning oil demands may be expected to exceed those of last winter by a sizable margin, together with the fact that the total oil business has become a lot more seasonal in its nature in the past several decades. The current low level of demands for all oils, characteristic of each summer period, is perhaps helping now to create a false sense of security regarding next winter. In this they are assisted by the heavy stock position inherited last spring from an abnormally warm winter. A careful examination of each of these two sources of concern—(1) the probable level of demand for burning oils next winter and (2) the increasing seasonality of the oil business—may help to convince those who are now doubtful of the existence of a potentially difficult situation next winter. Perhaps it is best to look at the seasonal factor first.

The light burning oil market was first developed beyond its status as a by-product in the middle 1930s. It had previously helped out the differential between the peaks that had occurred in the oil market in the summer, and the troughs that had occurred in the winter. The burning oil market grew so rapidly

*Standard Oil Company (N. J.), New York.

however, that since the middle 1930s the winter demands for all oils have exceeded the previous summer demands, and the spread between the seasons has been getting progressively greater. The 1947-48 winter demands were some 700,000 B/ds more on the average than the previous summer demands. That was a cold winter, but even with normal weather, it begins to look now as though the average requirement for all oils in the six colder months—October through March—will average as a regular matter, about 500,000 barrels a day more than the average demand for all oils in the six warmer months—April through September.

The shift in the peak demands of the industry from summer to winter, and the widening spread between the seasonal peaks and the troughs, has resulted primarily from the fact that the demand for light burning oils has grown at a faster rate than the demand for other major petroleum products. In 1933 kerosene and distillate demands made up only about 10% of total domestic demand for crude and products. By 1948 demands for all the middle fractions had grown to about 22½% of total demands for crude and products. The industry, from being one which reached its peak load in the summer, passed over to being a winter peak load industry during the decade of the 1930s; and the winter peaks are apparently pushing higher and higher as time goes on.

More and More Seasonal

The winter of 1948-49 stands as an exception to this trend of successive increases in seasonal peaks. But, since it was an unusually warm one, it is not safe to count on a repetition. The danger lies the other way around. There is a real possibility that the industry has forgotten the harsh experience of the winter of 1947-48 and has been lulled into a false sense of security by the occurrence of the easy winter of 1948-49.

The operating characteristics of the oil business now differ only in degree from those of any other peak load business, which must prepare itself in one of several ways, in its slack season, to meet the maximum demands to be made against it at the peak.

Facilities can be built capable of handling the peak load requirements. But that is the expensive way. Translated into terms of the petroleum business, that means costly producing, refining and transportation capacity which would, as a matter of normal practice, be partly idle for a large part of every year. It would mean that the industry would have to achieve an extraordinary flexibility. Employment would be less stable. At the same time, it is a way of operation that is most likely to cause violent price fluctuations during the transition from one season to another. It requires abnormal seasonal price changes to induce greater output, alternately of gasoline, then of burning oils; price changes which the public would find hard to understand since the higher prices would come just when the products are needed most.

This expensive provision of output capacity to handle the peak load requires huge capital expenditures for equipment. The alternative to placing the full seasonal adjustment on changes in the level of the industry's output is to provide adequate tankage to be filled in the off season, combined with moderate seasonal adjustments of refinery yields. Hypothetically, it should be possible to accommodate the petroleum business to its seasonal requirements by stabilizing crude production and refinery runs and yields to the average requirements for the year. In that event, however, storage facilities would have to take all of the burden of adjustment. Of course, that is not the way the industry has operated in the past, nor will it in the future. But the contingency serves to illustrate that the required seasonal adjustments may occur in one, or a combination of three ways, (1) by the production of crude and level of refinery runs, increasing or decreasing, (2) by inventories of heating oils increasing in the summer and declining in the winter (the reverse is true of gasoline, but to a lesser extent) and, (3) by the adjustment of refinery yields.

The most appropriate combination of these three elements of adjustment is a matter of degree, to be determined by trial and error and by the practical experience of the industry. It is important to note, however, that, because of the failure at all levels, including the distributor's and consumer's levels, to build adequate storage, and to be prepared to fill it during the current summer months, the industry is now preparing a heavy strain on the flexibility of its output next winter. More particularly, it is preparing a heavy burden on its ability to adjust refinery yields to meet next winter's needs. It is hoped that the burden will not require a greater flexibility than the industry can deliver. At worst, actual industry operations might lag somewhat behind the requirement for rapid change. At best, the public will still want to know why a rising price for burning oils at the beginning of the winter is necessary to provide the fuel needed in the nation's homes.

Next Winter's Demands Higher

The second basic question to examine before concluding that there really may be a cause for concern regarding next winter's oil market, is the probable level of demand for kerosene, and for #2 oil, which is included in the distillate category.

Up until the current year, the demands for these so-called middle fractions, have advanced more vigorously than the demands for any of the other major petroleum products. The current demand level, computed at the point of disappearance of primary supplies, has been registering very large decreases from last year. Even in the first part of the current year, demands were disappointing for these products, but the percentage declines have tended to become progressively greater in recent months. The explanation of a warmer first quarter and a subsequent failure to fill distributor's storage, are adequate to explain part of the declines. But the question has arisen as to whether there may not be more basic reasons for the declines; reasons perhaps associated with the current weakening in the level of general business.

A re-examination of the probable demand for kerosene in the current calendar year, does suggest that there might be a slightly lower level of requirements than was experienced last year, but the probable loss is not very great—perhaps something under 2%. Manufacturers' sales of space heaters, hot water heaters, and floor and wall furnaces, have been disappointingly small. But it seems cer-

tain that the average number in use, that is, the average number of these appliances that will be burning kerosene and range oil with the coming of cold weather, will not be any smaller than last winter. In fact, the average number in use will undoubtedly be larger, and if it were not for the warmer than normal weather in the first quarter, kerosene demands for this purpose would probably be considerably greater than last year. Likewise, there is no reason to expect more than a moderate decline in the use of kerosene as tractor fuel, for illumination, and for other miscellaneous purposes.

Space heating demands for #2 oil were subject to the same weather influences as kerosene in the first quarter. In the case of home burners, however, installations this year, after a slow start, soon began to run ahead of last year's figures. It looks as though the average number of home burners that will be consuming #2 fuel next winter will be significantly larger than the number of units in operation last winter, and that the resulting demand for distillate fuel for space heating will be correspondingly higher.

Railroads use of diesel oil, also a part of the distillate category, has continued to grow. Data available on the use of distillate as vessel bunkers, in electric power plants, and for other miscellaneous purposes, all suggest that there is no reason to believe that the total distillate demand in the calendar year, 1949, will be less than last year. Over the full twelve month period, all the probabilities suggest that it will be greater.

This rechecking of distillate demand estimates, together with a reexamination of the probable demands for other major products, and an analysis of export probabilities, suggest that the total demand for all petroleum products in the market east of the Rockies, may be about 2% higher for the full 1949 calendar year than last year. That is true even though the demands for all oils showed a loss of about 2% in the first half of the year.

It is expected that both kerosene and residual may show small losses for the calendar year. Gasoline and distillates, on the other hand, may increase some 6% and 4% respectively. Again this is the calendar year, not the season.

Estimated Crude & Product Demands

TABLE I

Districts I-IV—In 1000's bbls/day

	Year 1949	Change from Year Ago %
Total Demand (including Exports)		
Gasoline	2257	+6.1
Kerosene	300	—1.3
Distillate	884	+3.9
Residual	1032	—3.0
Other Products	693	+2.7
Crude Oil	110	
Total	5276	+2.0

TABLE II

Districts I-IV—In 1000's bbls/day

	Year Ended 3/31/50	% Change
Total Demand (including Exports)		
Gasoline	2256	+3.9
Kerosene	313	+8.7
Distillate	919	+9.9
Residual	1022	—3.1
Other Products	711	+6.6
Crude Oil	111	
Total	5332	+3.5

TABLE III

Districts I-IV (by quarters)

	1st Qtr. 1949*	2nd Qtr. 1949*	3rd Qtr. 1949	4th Qtr. 1949	Calendar Year 1949	1st Qtr. 1950
Total Demand (including exports)	*Percentage Change from Year Ago*					
Gasoline	+ 9.8	+ 6.6	+ 5.1	+ 3.2	+ 6.1	— 0.1
Kerosene	—14.4	—22.7	—	+27.0	— 1.3	+14.6
Distillate	— 5.3	—17.8	+ 1.8	+31.7	+ 3.9	+13.1
Residual	— 2.8	— 4.9	— 1.3	— 2.8	— 3.0	— 3.6
Others & Losses	—12.7	— 6.3	+ 1.7	+ 6.0	— 2.5	+12.1
Total Crude & Products	— 1.4	— 2.6	+ 2.7	+ 9.1	+ 2.0	+ 4.4

Estimated Supplies Needed to Meet Expected Demands in District I-IV

TABLE IV

(Including Stock Position at End of Quarterly Periods)

	1st Qtr. 1949*	2nd Qtr. 1949*	3rd Qtr. 1949	4th Qtr. 1949	1st Qtr. 1950
Supplies	*Thousands of Barrels Daily*				
Crude Production	4382	4090	4100	4500	4400
Natural Gasoline, etc.	345	340	350	370	380
Imports	577	587	575	578	551
Total Supplies	5304	5017	5025	5448	5331
Crude Runs	4574	4300	4533	4775	4697
Yield on Crude	*Percentage*				
Gasoline	43.3	46.6	46.2	42.0	42.2
Kerosene	6.7	5.5	5.1	7.5	7.4
Distillate	18.3	16.5	16.6	20.8	20.8
Residual	19.7	18.4	17.7	17.7	17.7
Others & Loss	12.0	13.0	14.4	12.0	11.9
	Mar. 31	*June 30*	*Sept. 30*	*Dec. 31*	*Mar. 31*
Closing Inventories	*Millions of Barrels*				
Gasoline	111.5	98.5	88.0	91.6	115.0
Kerosene	17.3	23.0	25.0	16.8	10.0
Distillate	41.8	55.1	69.0	45.3	25.0
Residual	30.8	30.6	34.5	35.7	27.0
Other Products	74.3	72.5	69.5	68.8	72.9
Total Products	275.7	279.7	286.0	258.2	249.9
Crude	235.5	240.6	221.3	218.0	215.0
Total Crude and Products	511.2	520.3	507.3	476.2	464.9
Stock Changes					
Crude	+139	+ 56	—210	— 36	— 33
Products	— 63	+ 44	+ 68	—302	— 93
Total	+ 76	+100	—142	—338	—126

*Based on Bureau of Mines data first 4 months and API data for May and June.

These calendar year estimates provide a point of departure, but they do not serve as a guide to the situation as it may develop through the winter. Demand estimates covering the twelve months ending March 31, 1950 are necessary for that. TABLE II is consistent with TABLE I (three of the quarters overlap) and with the analysis of consuming devices supporting the TABLE I estimates. It drops out, however, the poor first quarter of 1949, and adds an estimate of the first quarter of 1950, when more consuming devices will be used and presumably normal weather will compare with a warm first quarter this year.

These total demand estimates look reasonable enough, even for the twelve months ending March 31, 1950. They certainly do not suggest any supply difficulty when they are looked at as an average for twelve months. But when they are broken down by quarters difficulties begin to appear. It is only then that we begin to see the effect of a current failure to fill secondary storage, superimposed upon the normal seasonal pattern of a rising demand in the last quarter of the year.

The normal seasonal distribution of demands by quarters is distorted in the accompanying table; first, by abnormally warm weather in the initial quarter, followed by failure of secondaries to begin to take their usual deliveries in the second and third quarters; and second, by the assumption of normally cold weather in the fourth quarter of this year, relative to an abnormally warm fourth quarter last year. Opinions will differ as to the precise levels of probable demands, and as to the distribution of those demands by quarters, but the tabulation appears to be within the range of reasonable probability, based on careful analysis of many variables.

These demand figures assume a normal winter in the fourth quarter of 1949 and in the first quarter of 1950. Since the first quarter of 1949 was considerably warmer than normal, the weather for the full calendar year 1949 is assumed to be about 7% warmer than normal.

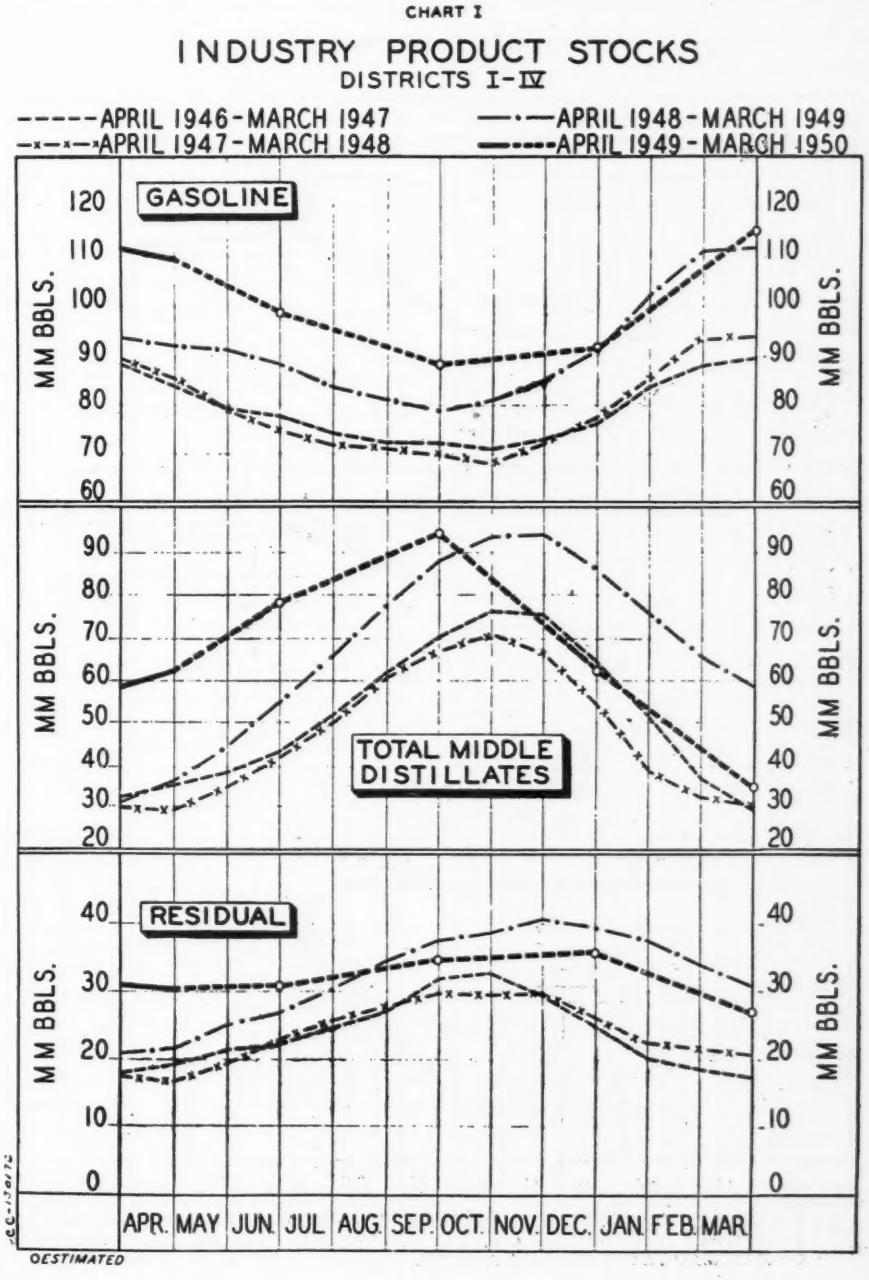
Before going any further it is important to point out that these winter demands can be met, even though the total middle distillate demands may, in the fourth quarter of this year, average about 30% above a year ago. But to say that these demands can be met is not enough. To complete the story, it is necessary to examine what is involved on the supply side of the industry, including stock drafts, and what that means in terms of operating risks and public relation risks for the industry.

Larger Volumes Must Be Supplied

In order to determine the requirements that will be made against the supply sources of the industry, an analysis was first made of primary product stocks, particularly of the total middle distillates, to determine what might be safe minima during the winter period. Certainly the winter of 1947-48 was a period in which stocks were insufficient to provide a sense of security to the industry and to the American public. They were insufficient to assure a smooth and uninterrupted flow of products through distribution channels. And it is well to bear in mind that average demands are now substantially above those of two winters ago—there being some three-quarters of a million more burners in use, and perhaps as much as a million more oil stoves.

TABLE IV sets forth, by quarterly periods, one possible pattern of requirements that could be made against supplies if estimated demands are to be met without depleting inventories below levels considered to be safe operating minima in the latter part of the winter. It may be that supplies will lag behind the volumes shown here for the

CHART I



third quarter, but that would mean simply that still greater volumes would be required late in the winter.

The level of product stocks used in this analytical table can be readily compared against stock levels in recent years by reference to CHART I. In this chart, the stock position of past years is recorded as of the end of each month, whereas the estimated forward stock position is recorded as of the end of each quarter. Gasoline stocks are expected to remain relatively high, and residual stocks, although under last year, would stay comfortably above the tight inventory position of the winter of 1947-48. Total middle distillate stocks, on the other hand, are shown to begin a steep decline in the fourth quarter of this year, plunging to levels that existed during the latter part of the winter of 1946-47, but holding slightly above the undesirably low levels of 1947-48.

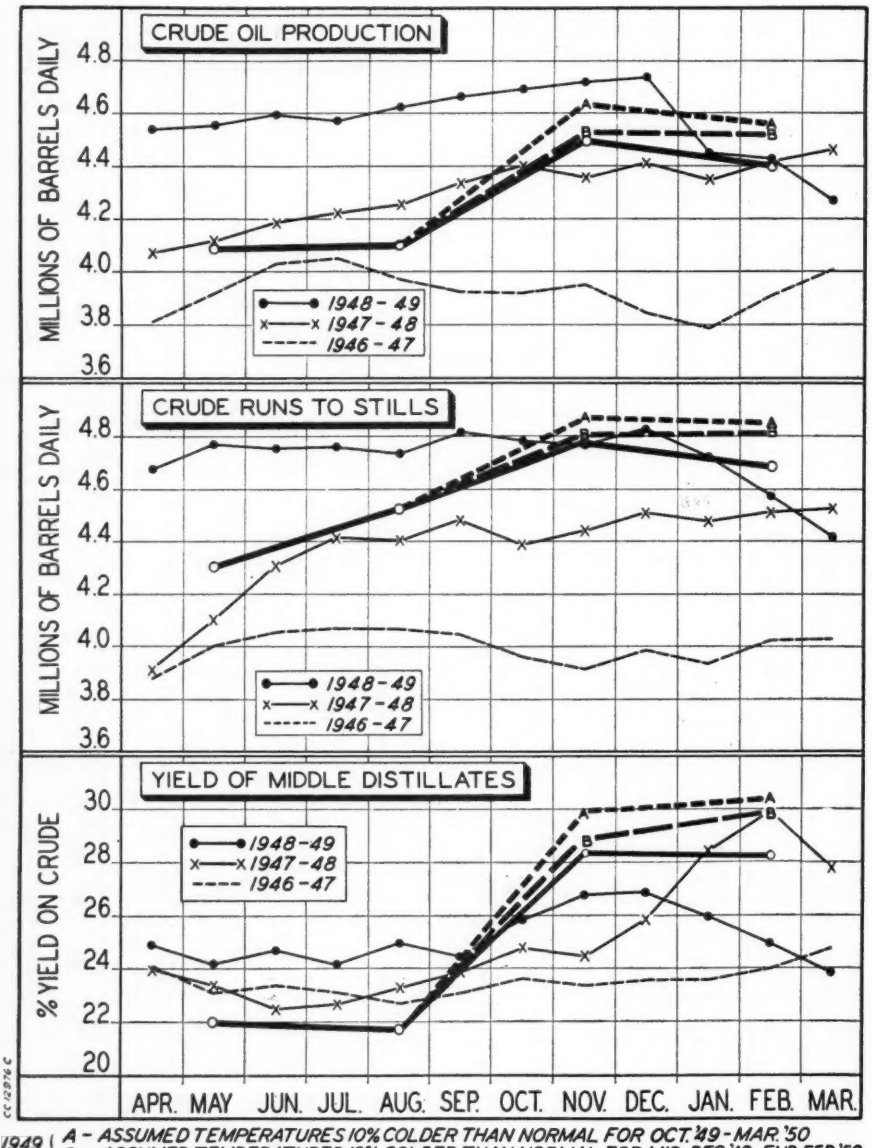
TABLE IV indicates that stocks of crude would be drafted sharply in the present, or third quarter of the year in spite of rapidly increased production. By the end of the winter, that is by next March 31, the total of crude and product inventories would be 46 million barrels under the March 1949 figure.

Those who have felt discouraged about the possibilities of recovery in the level of domestic crude production should find satisfaction in this analysis. Crude production east of the Rocky Mountains is now averaging about 3,900,000 barrels a day. We are already in the middle of July; the first month of the third quarter. It would appear that a prompt and substantial increase in crude production is desirable; to average some 200,000 barrels a day more in August, and another increase of perhaps 200,000 barrels a day in September. That would be an average of 4,100,000 barrels a day for the full third quarter, which appears to be necessary to prevent crude drafts exceeding desirable volumes in the immediate months ahead. Even with those increases in crude production, it looks as though crude inventories may average a decline of greater than 200,000 barrels a day in the third quarter. If the increases do not occur, the decline will be correspondingly more rapid.

CHART II

INDUSTRY OPERATIONS

DISTRICTS I - IV



Refinery Runs Must Be Expanded

Refinery runs are currently averaging about 4,275,000 barrels a day east of the Rockies. That rate should likewise be stepped up by 200,000 barrels a day or more in each of August and September, to average better than 4,500,000 for the third quarter; the rate shown as required to permit even a minor product inventory accumulation before the winter.

Unless crude production and crude runs do increase substantially in August and in September, it may be that the industry will find itself with product inventories inadequate for protection as the cold weather begins. These increases for crude production and for refinery runs that appear to be required in the months just ahead, cannot help but mean that the petroleum market is approaching a period where demands will again become stronger relative to supplies; and in a competitive market, that usually means firming of prices.

Strains Expected In 4th & 1st Qtrs.

It is in the fourth quarter of this year, and in the first quarter of next year, that the really heavy demands against supplies appear to be in prospect. This is shown clearly in CHART II which records average industry supply operations for past years by months, and estimated supply operations as averages for quarterly periods. Crude production averaging around 4,450,000 barrels a day for the six months, October-March, appears to be required. That is 500,000 barrels a

(Continued on page 126)

Competing With Natural Gas

Sizing Up the National Outlook, and One Specific Market

by
Robert Gray*

BEFORE THE FIRST DOMESTIC oilburner was put on the market, there were quite a few thousand homes in the country heated with natural gas. We have always had natural gas competition, although not always in the same cities where it is making headway today.

In those earliest years when oilburners were just being invented quite a few of the homes in our neighborhood down in Kansas City had put conversion gasburners into their furnaces, and were enjoying the first type of automatic heating at the low cost of 40¢ a thousand feet.

During the 30 years since then, oilheating was born, quickly outdistanced its rival, and has completely grown up. In most of those years and in most markets where natural gas could be had, its cost for heating was lower than the cost of heating with oil. Yet, somehow, speaking of the country as a whole, the oilheating industry has built up a 55% lead over the number of gas installations.

During the next few years natural gas is going to become more actively competitive with oilheating in several sections of the country. This will include some of the important markets in the East and possibly in the Pacific Northwest. Our industry will certainly be affected by this increasing gas competition, but by no means will it be seriously crippled. For quite some years ahead there can be and probably will be more oilheating installations annually than gas. This will be particularly true if we have the courage to keep our prices up to a point where we have money to do some selling.

Natural gas has been getting good headlines during the past two or three years because it is fresh news. Digging up the ground and planting thousands of miles of large diameter pipeline is dramatic and is certain to attract publicity in a good many areas. Oilheating, too, had a lot of publicity during the past couple of years, and while it was not the kind that we like, we have undoubtedly derived some benefit from the circumstance of having automatic heating in one form or another on the front pages for so many months.

In discussing gas competition, it is necessary to first recognize that it means different things to different people. For example in the East manufactured gas is a high-priced luxury fuel, and up to now has made little headway. For this discussion then we are thinking only of natural gas.

National and Local Problems

There is another important parting of the ways, as we look into any kind of gas competition. The manufacturer of oilheating equipment, and the refiner of fueloils think of the effect of natural gas competition on their overall national markets, while the oilheating dealer in an individual city must look on it as a purely local and strictly personal problem.

While oilheating has been keeping well ahead of gasheating in the national race, certainly in some individual cities like Minneapolis or Cleveland it has lost ground.

Let's first have a look at the broad picture because the overall acceptance of oilheating or gasheating does have some influence on its local popularity. Then, we'll consider the problems and possibilities of an individual market like Minneapolis where gas is cheap, plentiful and tough.

A short time ago an advertising man wrote us asking a very simple question, "What is the potential market for the various types of heating based on fuels?" That is the kind of a request that could take a week to answer and even then the conclusion might be simply one man's opinion. The industry has, however, a rather interesting yardstick on this. During the years 1940-8, inclusive, there were nine consumer surveys on fuel preferences for home heating. Combining them all we found that 44% of American families would prefer to heat with oil, 33% with gas, 18% with coal, and 5% with other fuels. It was interesting that the first of the nine surveys, done by Elmo Roper for *Fortune* Magazine in 1940, and the last one, done by *Small Homes Guide* in 1948, showed the fuel preferences in each instance to be almost identical with the average for the whole nine.

If we take the ratio of families that know they want oilheat some day, and subtract those that already have it, the potential market by that method is for approximately 4,800,000 oilburners. If we do the same with gas the potential market is 4,041,000 gasburners. With coal, of course, we have a reverse situation; 13½ million families with central heating plants now use coal, and only 3½ million want to use it, so there is close to 10 million families who want to get away from it.

There is nothing to indicate that the preference for gas is higher today than when these surveys were made. Just because a lot of new pipelines are being built to handle natural gas it doesn't follow that the number of gas installations made in the next few years will greatly exceed the rate in former years when gas was not being restricted.

When all of the natural gas pipelines now under construction or approved by the Federal Power Commission for later building are completed around 1955, the total amount of new gas available

The Heat They Want and Have

	Gas Heat	*Oil Heat*	*Coal Heat*
Families Want It	6,600,000	8,800,000	3,600,000
Now Have It	2,559,000	3,976,000	13,465,000
Waiting to be Sold	4,041,000	4,824,000	— 9,865,000*

*Want to dispense with it.

*Summary of a talk before the Upper Midwest Oil Burner Assn. at Minneapolis July 26th.

for home heating would take care of only 1,560,000 additional homes. Of these approximately 821,000 will be in Eastern states, and the balance, or 739,000, in the Midwest. This is based on the assumption that only 20% of the actual gas in the lines will be used for heating residences. That has been the customary percentage with natural gas. It is important to keep in mind that the great bulk of natural gas must be used for industrial purposes, rather than home heating because of the so-called "load factor."

Spreading these home heating installations over six years ahead would represent only a quarter of a million a year, but when we add to that the installations that will be made in manufactured gas areas, in spite of the high price, and in natural gas communities that already have surplus capacity, the outlook is for an average of 350 to 400,000 installations a year. The gas industry has already had one year considerably larger than that—1946, when about 663,000 installations were made.

There is every indication that during the next six years oilheating installations will average at least 500 to 600,000 a year, and it's a fairly good bet that when we arrive at 1955 the number of oilburners in use will have retained a strong industry lead over gas.

The American Gas Association estimates that since the end of the war a half million families have been refused heating installations because there was not enough gas available in the community. In the four years, 1945-48, inclusive, gasheating installations totalled 1,333,000. If the extra half million who are said to have been refused had been taken care of, the total would have been 1,833,000.

Actual oilheating installations in the same four years were 1,986,000, and there is no way of estimating how much higher that would have been if we had been able to give people burners when they wanted them, and had not been choked down for more than a year by the oil shortage scare.

For some reason oilheating has been showing its highest rate of gain in areas where natural gas is actively competitive. This, of course, does not refer to any individual cities. In the four year period, 1945-48, inclusive, the number of oilburners in use in the country as as whole increased 74%. In the Mid-Atlantic and New England states where natural gas is not a factor, and where manufactured gas costs much more than oil as a fuel, the four year gain was less than the national average—it was 64%. In the twelve Midwestern states where natural gas finds its stronghold, and where in many cities it has been cheaper than oil, oilheating increased 93% in that four-year period.

Of course there are several reasons for this but it is obvious that the coming of natural gas does not put a blight on oilheating over any considerable area.

Price Picture Changing

There is every indication that natural gas will lose its price advantage before too long. Fueloil prices have already dropped 25 to 30% since their peak a year ago, and in the Midwest there is evidence that they will go still lower in some of the cities where natural gas is strongest. There is no point, however, in trying to get fueloil prices down to today's competitive level with natural gas in all the Midwest cities, since obviously the oil industry is only going to be interested in expanding the fueloil market if the price carries some attraction.

The most interesting development in the competitive price picture is the way the independent gas producers in the southwestern oil states are waking up to the fact that they are selling their heritage for a mess of pottage. Gas has always been very cheap at the well, principally because much of it came as a waste product of oil production, but more recently the folks down in that country have discovered the Btu, and they are beginning to wonder why they sell a good fuel for so much less than other good fuels are bringing.

There have been several interesting and significant comments on that subject in the past sixty days, ranging all the way from the investment angle, back to the field returns. Here are a few of the comments:

James F. Oates, Jr., Chairman of the Board of Peoples Gas Light and Coke Company, Chicago, speaking before the Investment Bankers Association said, "Higher rates on gas for heating homes require serious consideration to protect the financial integrity of utility companies, and to prevent an unwarranted exhaustion of natural gas through an uneconomically low schedule of rates."

Then in the June issue of *The Lamp*, which is the brass hat house organ of the Standard Oil Co. (N. J.), we find "It is unlikely that the price advantage that natural gas has enjoyed over coal and oil can continue indefinitely. The price of gas at the well has been low, selling at around five cents per thousand cubic feet. On the basis of its heating value, 6,000 cubic feet of gas selling for 30 cents is equivalent to a barrel of No. 2 heating oil now priced at about $2.67 at Gulf ports. The price at the well for gas, however, is only a small part of its delivered cost to customers. Transportation and distribution of gas is expensive, costing approximately five times as much as transporting the equivalent in fueloil by tanker."

Then we have Richard Gonzales, head economist for Humble Oil and Refining Co., and recognized as one of the top masterminds in the industry, making some statements in the May 19 issue of the *Oil & Gas Journal*. He points out that while gas at the well brought an average of 3.8¢ in 1945 and 6¢ in 1948, recent contracts are going at 10¢ and some buyers are finding it necessary to offer more. He predicts that within the next few years gas will bring 15 to 20¢ at the wells.

Another interesting quotation is from the July 2 issue of *Business Week*, stating that "Users of natural gas will probably pay more for their fuel soon." Its opinion was based on the Supreme Court decision in the Panhandle Eastern Pipeline case and the decision by the Senate Commerce Committee not to make any significant changes in the Natural Gas Act.

Petty's Oil Letter has been following these cases for some time. Briefly they establish the point that rates charged by a gas pipeline are controlled by the Federal Power Commission only so far as they apply to the field production owned or leased by the pipeline company. That covers only about 42% of the gas they carry. On the 58% that they buy they must pay the going commodity price, whatever the well owner can get, and they can then blend this

Experience with Combination Burners

DURING THE PAST year there has been considerable discussion and investigation of the market for a combination oil and gas burner . . . using gas in mild weather and oil on coldest days. So far neither the oil or gas industries have been too active in taking ahold of the idea, with one or two exceptions.

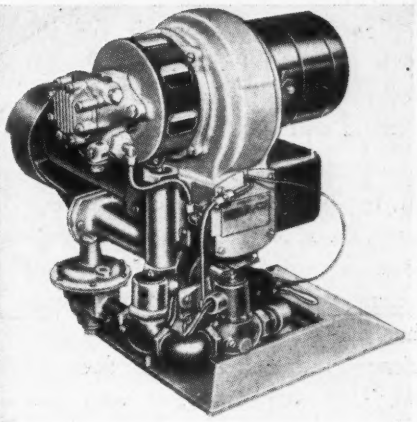
St. Louis seemed to be getting quite a bit of publicity on this equipment so a short time ago we had an opportunity to spend a few hours there asking questions of the interested companies, including the gas utility.

Around 300 combination burners went into St. Louis homes last year and thus have a season's experience behind them. The utility, Laclede Gas Light Co., had to approve each installation before a dealer could make it, and was inclined to deal with a lean hand. Apparently three burners were approved—Norman, Roberts-Gordon and Dual-a-Fire. Before the dealer could be approved for making installations he had to show that he was familiar with oilburner service, since the gas company refused to have anything to do with servicing.

Most of the St. Louis installations were in small new homes and sold installed at $325 to $400 for the vaporizing type. These homes had average fuel bills of around $125, with $25 for oil and $100 for gas. With that small consumption, one filling of a 275 tank took care of fueloil needs.

The largest number of jobs installed in St. Louis last year were Normans, with Fillo Engineering as distributor. One neighborhood dealer, Curran Coal Co., sold 48 installations, using 21 Normans, 2 from Roberts-Gordon and 25 Dual-a-Fire burners. Only on the Normans did they have a full year's experience. The 21 burners had required a total of 34 service calls.

A more expensive burner, selling at $475 installed with a 275 gallon tank, the Dual-a-Fire is a gun type and appeals more to individual home buyers than to operative builders. This burner is made in St. Louis and about 300 were sold in the past 12



Dual-a-Fire gas-oilburner

months . . . 80 in St. Louis and the others all over the Midwest. This burner has motorized draft control which switches automatically when fuels are changed from the down draft diverter necessary with gas to a conventional draft regulator for oil.

On all St. Louis installations the automatic change from gas to oil occurs when the outdoor temperature reaches 27°.

Now that more natural gas is becoming available the gas company has stopped issuing authorizations for combination burners and probably won't allow any more on its lines until it has sold the heating capacity of its new pipeline which is to be completed by November first.

Dealers say they had sold about 375 more jobs to new home developments, but that business has to be canceled. Anyway there is not much point in buying the combinations when straight gas conversion jobs install for $250 and the utility guarantees year-round fuel supply.

Pipeline companies which supply gas to local utilities frown on combination burners. They point out that they cooperate with the gas companies by giving them lower rates in warm months when most gas goes cheap to industries, and then with higher rates for the winter they make their money for the year. Throwing any quantity of the winter gas load over to the oil industry robs them of the premium price volume they need for profits.

cost into their Government controlled prices and raise the blended selling price. Leland Olds, a member of the Federal Power Commission, who fought this idea, predicted that gas prices will increase 500 million dollars a year when there is unrestricted competition with other fuels.

Perhaps the best crack along the price line was quoted in the June issue of *Gas* magazine, where Col. Ernest O. Thompson, an important member of the Texas Railroad Commission, said that with oil at $2.65 a barrel gas should sell at the well for 44¢ a thousand feet. Then at the Natural Gas meeting down at French Lick in May, William Murray, Jr., who is chairman of the Texas R. R. Commission told the folks that the Texas House of Representatives recently passed a resolution instructing the Commission to actively oppose any additional interstate pipelines which would take gas out of Texas.

We can see that in the weight of important opinion natural gas will not for long enjoy the cost advantage it has had. An example of what might be expected when natural gas comes to the East is the experience in Washington, D. C. It is the only large Eastern city having straight natural gas. The cost for home heating is 10.4¢ a therm and that is equivalent to 13.5¢ fueloil, while fueloil actually costs only around 10¢.

Now let's give some attention to Minneapolis as a typical Midwest market where natural gas is cheap and growing in popularity. The individual dealers, both for oilheating equipment and fueloil, would seem to have their hands full in such a situation. The greatest problem when cheap natural gas becomes active is to keep the oilheating group from becoming depressed to the point of cutting prices, relaxing promotional efforts, and in general feeling that their days of expansion are permanently ended. Quite a number of dealers in Midwest markets situated like Minneapolis have said things like that to us.

There is no question but that the days are ended when business could be conducted just like it was before the cheap gas came in. At the same time we have reported in the magazine some instances where individual oilheating companies have actually done better under those conditions. The first and most signifi-

cant thing to remember is that about 38% of American families have a prejudice against gas for heating, totally apart from what its cost might be, in other words these families have expressed to us in surveys the feeling that they wouldn't want to heat with gas at any price.

Objections to Gas

The objections that they mention in the order of their importance are: (1) gas is dangerous; (2) it provides a chilly heat; (3) it's unhealthful; (4) it has an odor; (5) gas is dirty; (6) the pressure is low in coldest weather. We don't have to be concerned about the truth of these insinuations, since it's the public impression that counts more than actual facts in any merchandising situation.

There is no reason to believe that Minneapolis would be any different from any other cities. Nearly two-fifths of the families in town then would not want gas even when it is cheap. On the other hand, those same families will not be out actively looking for oilheating on any great scale because this is a buyer's market, and the dealer has to do the selling.

Sales activity at a time like this is aimed at that two-fifths of families, or rather at the share of them that does not already have oilheating. That does limit the number of prospects to a fairly small per cent of the total families in the city, but at the same time they are large enough in thousands of homes to warrant some rather intensive selling activity.

This points to selling prices high enough to stand reasonable sales costs and a fair profit. Conversion gasburner installations sell in the neighborhood of $250. You couldn't get oilburner prices down that low if you wanted to and stay in business very long. It is important, then, to keep the selling away from a price comparison basis on equipment.

If a family wants gasheating, reducing the price of an oilburner is not going to make them want oilheating. Also, it is doubtful if very many individual families have installed gasheating just because the equipment is cheaper. Speculative builders are naturally influenced by low-cost equipment, and for that reason will always be inclined to favor gas, if it is a popular fuel in the market.

When we come to fuel costs, however, price is undoubtedly a factor, and has been largely responsible for the growth of natural gas sales. To get fueloil prices a little lower in this market would naturally help the situation.

The actual dollar differences are not great, but people do think they are significant. Based on the average Minneapolis fueloil consumption of 1,500 gallons per home its cost is around $35 per year higher than gas. This is assuming that efficiencies in burning the two fuels are equal. That will be true on your new installations where you match a good quality furnace-burner unit of one fuel against the other, and where the insulation characteristics of the homes are equal.

Dealers in a market like Minneapolis have some good opportunities for developing business outside of the city and away from the gas lines. This seems to be a rather obvious point, but we don't find very many Midwest dealers working on it. In checking over the counties immediately around Minneapolis, it seems there is no gas competition in the towns within a 35 mile radius, with the exception of Stillwater, and there the cost is equivalent to 24¢ oil. Clearly there is a lot of good rural territory to be worked. Dealers who have tried it find that they can operate a burner and service business over a radius as large as 35 miles and they could supply fueloil at that distance if they install large tanks.

A year ago we had a story in the magazine about a dealer down in Lincoln, Nebraska, developing rural business. Gas in Lincoln is cheap and oilburners were not selling as well as they had been at one time. This dealer in two years sold two hundred installations for farms, and other rural buildings. You may recall the story, how he worked on country churches and schools because when he could sell one of those, it was fairly easy to sell the church and school board members and in that way get penetration into a community.

He did find that farmers in general do not hunt up an oilburner man and tell him that they have decided they want an installation. Real selling is necessary, but once a farm community can be started on oilheating, the neighbors very quickly take an interest and become ripe prospects.

Third Significant Factor

There is a third factor that can be significant in a market competing with cheap natural gas. That is the degree of tie-up or integration of oilburner and fueloil men. When oilburners and fueloil are sold by the same firm, there is less disturbance over gas competition becoming cheap and active. With an established oil gallonage the company knows that its dollar volume will remain substantial, so it can carry on much as usual, except that it will not be selling as many oilburners.

The strictly equipment dealer, on the other hand, is in considerably more difficulty without the steady backlog that the oil man has. As a result, the oilburner dealer in many instances switches to selling gasheating equipment along with oilheating. This is understandable because he has to eat, but when he loses his loyalty to the one fuel he also loses quite a bit of his selling enthusiasm and promotional drive.

More oilburners will be sold in a market like Minneapolis, even in the face of cheap gas, when we arrive at a closer wedding of oil and burner sales within the same company. Not only does such a tie-up help the dollar situation, but more often than not, it also serves the

Fuel Cost Equivalents

No. 2 or 3 Fueloil	*Natural Gas*	*Mixed Gas*	*Manfd. Gas*
7.0¢	50¢	40¢	26¢
7.5	54	43	28
8.0	57	46	30
8.5	61	49	32
9.0	64	51	34
9.5	68	54	36
10.0	71	57	38
10.5	75	60	40
11.0	79	63	42
11.5	82	66	44
12.0	86	69	45
12.5	89	71	47

Fueloil is based on 140,000 Btu per gallon for 32 gravity, natural gas on 1,000 Btu per cubic foot, mixed gas on 800 Btu and manufactured gas on 530 Btu per cubic foot.

To make comparisons read across the table. For example, fueloil at 10¢ a gallon is equal in heating value to natural gas at 71¢ a thousand cubic feet, mixed gas at 57¢ and manufactured gas at 38¢.

In this table efficiencies are assumed to be equal, which would be true on a new installation of a good grade furnace unit for either fuel.

customer better. A single responsibility for equipment, service, and fuel is more likely to provide perfect oilheating than where the functions are split. Perhaps there are already enough or too many companies selling either burners or oil in the Minneapolis market. That could be said of any city. The ideal procedure then would be to avoid further duplication by getting an existing oil company and a burner company to join forces and work as a unit. This would need to be an actual corporate merger so that each would have a financial interest in the other.

On the other hand there is no law against the present burner dealer simply going into the oil business, or vice versa. When a burner dealer believes he could get out of his service customers a minimum of 200 oil accounts for a start, he can afford to buy a truck and get going. Turning it around the other way, when an oil man is convinced that he could get a minimum of 300 of his oil accounts to give him their burner service business, he can afford to start into the equipment end and to pay for a top-grade service man. In the earlier years of oilheating, ventures of this kind were successfully attempted by the thousands, and we should have many more of them today, particularly in the Midwest.

We have made three recommendations, then, to oilheating men situated in a market that has cheap natural gas. (1) Keep equipment prices up to where you can afford to do a good selling job on the 38% of families that are prejudiced against gas; (2) put real time and effort into developing the rich rural and small-town market within a 35 mile radius; (3) pull the oil and burner companies together into combination units for financial self-protection, and to provide better oilheating for the consumer.

In this discussion we have not brought up the more common things people talk about when a salesman tries to convince the prospect that he does not want gas. All dealers are reasonably familiar with those selling points. Yet it is well known that presentations of that kind have not succeeded in stopping or appreciably retarding the growth of natural gas heating in markets where it is cheap. It's time, then, to recognize our problems for what they are and concentrate our efforts where they will be most effective.

No one has to explain that there isn't any quick way to lick cheap gas competition. If there were we would all have learned about it long ago. Yet the fact that there are still a number of good oilheating outlets in Minneapolis shows that the gas crowd doesn't find it too easy to run us out of a market either. The developments of today would indicate that before long the cost of the two fuels is going to be about the same. Then the winner will be chalked up as the group that does the best promotional and selling job and that has the fewest dissatisfied customers. Of the two, oilheating still holds the best cards for the long game.

Oilburners Show Gain In St. Paul Survey

THE 1949 MARKET STUDY recently completed by the St. Paul (Minn.) *Dispatch-Pioneer Press,* reveals a 3.7% gain in the number of oilburners used for domestic heating. Actual number of burners installed increased to 50,461, compared with 46,571 reported in last year's survey. This contrasts with a decline for coal or coke installations from 58,450 in 1948 to 54,560 this year.

The figures below are a tabulation of returns gathered during the survey, answering the question "How Homes Are Heated":

	Coal or Coke	*Oil*	*Gas*
1949—%	51.9	48.0	.1
No.	54,560	50,461	105
1948—%	55.6	44.3	..
No.	58,450	46,571	..
1947—%	59.6	39.6	.2
No.	56,888	37,796	127

Robert P. Page, Jr., chairman of the board, Autocar Co., Ardmore, Pa., and with the firm for 39 years, died on June 18 at the age of 70. He died of a heart ailment five hours after he had been stricken at home. He became chairman of the board last January, when he retired as president, a position he had held since 1927. Mr. Page joined Autocar in 1910 beginning as a cub salesman. He was assigned to the firm's Boston branch and rose to the position of branch manager. Later appointed New England district manager he became sales manager for the entire company in 1923, four years before he became president. He is survived by his wife and two sons.

"I want a bigger cut of the take!"

Myron R. Holmgren, formerly president Hughes Oil Co., Chicago, has formed River States Oil Co., Chicago 1, Ill., to concentrate operations in the states along the Upper Mississippi. He is president of the new company, which owns and will operate a river terminal at LaCrosse, Wis. Here the company will terminal products for companies operating in that area and sell to independent jobbers. In addition, River States will conduct a general marketing operation in fueloils.

Roy H. Warmee, formerly sales manager, Moduflow Div. and prior to that manager, Sales Promotion Div., Minneapolis-Honeywell, has joined White Mfg. Co., St. Paul, Minn., as vice president and sales manager. It is expected that his appointment will give added impetus to the sale of White's Master Heat Regulator and Blowertrol controls. Mr. Warmee, who has spent his entire business life in or affiliated with heating organizations is well known in the industry, as well as in sales and advertising circles. In 1947 he was the recipient of the Edmund F. Maier trophy for meritorious service to sales management and civic leadership in Minneapolis.

C. E. Weir has been named manager, Edwardsville, Ill., plant of the United States Radiator Corp., Detroit 26, Mich. He succeeds G. F. Naumann, retired because of ill health. With the company since 1916, at the time of his new appointment he was assistant manager of the corporation's Geneva, N. Y., plant.

W. W. *Pyeatt* has rejoined Black, Sivalls & Bryson, Inc., Kansas City 6, Mo., to direct its New Orleans sales office. Until about a year ago he had been with the company's engineering department at Oklahoma City.

The Art of Specialty Selling

Six Fundamentals Essential to Successful Sales Activity

by
D. A. Packard

This article is based on a paper presented by Mr. Packard to the Oil Heat Institute convention at Boston. His observations are so sound, and his message so important to the oilheating industry that Mr. Packard's talk is presented here more fully than is usual with convention papers. Not only does the article point the way to better business for oilheating men, but it also reveals what those companies are doing who are competing for the customers' dollars. Mr. Packard is Household Sales Manager, Kelvinator Division, Nash-Kelvinator Corp., Detroit.

AT THE Detroit Sales Executives Club a few weeks ago some figures were used that I think brought home the extent of the task facing us. Before the war when there were about 46 million employed people working in America, it was estimated that there were 3,200,000 engaged in sales, or about one salesman for every 14 workers. Today, when nearly 60 million people are working, to be at a par with 1941 we would need 4,300,000 in sales work. Recent estimates however, placed our sales worker figure at only 3,700,000 or 600,000 short in number. In addition to this, I am quite sure that all of us are fully conscious of the fact that the *sale power per individual* is not back to the point it was in 1941, due of course to the fact that for nearly six years no new blood was injected into our sales forces and for the same period of six years practically no sales training was being conducted in our country.

The speaker using these figures estimated that six million salesmen would be required today to give us the national sales power per worker that we had in 1941. On that basis we are facing the problem of building our sales power from its present 60 per cent efficiency up to the point we need, if we are to keep the wheels of industry humming.

Much of what I say about the art of specialty selling is based on conclusions drawn from a meeting we held in Detroit in the fall of 1944. We invited to Detroit a group of 15 men—most of them from our own organization, but including men from department stores, furniture stores, public utilities and major appliance dealer field. All of them had been successful retail sales managers for a period of years. Combined, we had at this meeting well over 100 years of successful retail sales management experience.

We had a court stenographer record every word that was said in this week's discussion. When we were finished we had a 600 page volume that we have since found invaluable in guiding us in our own sales man-power program. Out of this discussion and out of the work we have done in our sales training division since that time, have come these impressions.

To us the art of building a specialty selling organization has six major fundamentals:

1) The *attraction* of men;
2) the *selection* from among those attracted of men who can be expected to succeed in sales work;
3) the establishment of an adequate *compensation* program, that is essential not only to a profitable operation but to a permanent sales organization;
4) the *training* of retail salesmen;
5) the necessity for planning to provide periodic *stimulation* of salesmen so that they will produce the maximum sales volume; and, finally,
6) the most important of all, because the success of all the first five fundamentals is dependent on this one, is the establishment of proper *sales direction.*

D. A. Packard

All of our own sales development work has been built around these six fundamentals. We will soon have been working with this program with our retailers for five years and I want to make this observation, which I believe is the keynote of the entire problem:

Once you establish *capable sales direction* in a retail organization the accomplishment of the other five fundamentals is a matter of time and training. However, until proper sales direction is established, it is of little value for a retailer to devote a lot of time and attention to the other fundamentals because without exception, an attempt to build a retail sales organization without proper sales direction is doomed to failure.

During the past five years we have seen a number of retailers successfully re-establish strong retail sales organizations with but little assistance from their manufacturer or distributor, other than furnishing materials. In every case they started with an experienced retail sales manager. On the other hand, we have worked days and weeks with other retailers with little or no success because proper sales management was lacking.

This is a serious problem facing manufacturers and distributors depending on specialty selling, because men who understand retail sales management are not now available to us in anywhere near the quantities we need.

The reason for this is obvious. During the 1920's specialty selling had its first

big growth. Thousands of young men started pushing door bells, and during the 1930's were able to pass on to younger men the experience so gained. Then came the war, and successful retail sales managers of the 1930's moved en masse into other fields for employment during the years when sales forces were not needed. After the war, only a fraction of the experienced, capable sales managers we had before the war returned to this field.

We are not going to rebuild the specialty sales power of America until we rebuild specialty sales management.

The last fundamental we discussed—proper sales direction—is really the most important. To illustrate how important it is I would like to cover the first five of these fundamentals by showing some of the things this sales manager must know about each.

What Is Sales Direction?

In the first place, the experienced sales manager knows that the attraction of men for his sales organization is very similar in many respects to the attraction of customers for his products. Experience teaches us the best way to attract men to a sales organization is for the sales manager to be constantly on the alert for prospective salesmen. He must let his acquaintances in service clubs and churches know he is always looking for bright young men who would like an opportunity to make a good living in sales work. In our field of major appliances, the capable sales manager is constantly keeping his eye out, in stores, filling stations and other places, for men who are in contact with and have become used to handling the general public. The experienced sales manager constantly keeps the members of their own sales force on the alert and rewards them for bringing in new men. The attraction of men who will enter sales work, stay with it and succeed is a difficult process.

When these methods fail to produce a sufficient number of applicants and want ads must be used, great care has to be exercised to keep from attracting numbers of floaters who are always looking for greener pastures. Such men are apt to be on their way again after a few weeks or a few months in each new field. Ads that promise permanent, profitable employment for hard work don't pull as many applicants as those containing glorious promises of quick riches—but they do attract a type of man who is far more apt to stay with the retailer long enough to be a profitable investment.

The second fundamental in the art of specialty selling is to make sure that the men selected are qualified for success in sales work. Only a few years ago many retail sales managers operated on the basis of hiring quantity, without any attempt at selection and allowing sales results to pick out those who could qualify. Most successful sales managers, however, agree that this was a very expensive way of building a sales organization. It is expensive to the company because of the amount of business lost through mishandling of prospects by unqualified people. It is even more expensive because of the ill-will created by unsound promises and agreements made to close sales by these unqualified salesmen.

Out of the war we believe there came a new appreciation of the value of aptitude testing. It does not assure retailers of hiring *only* men qualified to become salesmen. It does however assure them of materially increasing their batting average in the selection of men who will stay with them and be successful, and it has definitely proved that it will reduce sales turn-over.

The third thing the capable sales manager knows about specialty selling is the importance of a carefully worked-out compensation plan. Unless retailers are to make a profit they will not be in business to worry about the art of specialty selling. Consequently, a compensation plan must be set up so that it will assure a fair profit on a reasonable volume of business. Second, unless it assures a fair return to the individual salesman for his time and effort, sales turn-over will be excessive and sales results indefinite. From our viewpoint straight commission selling, while still in limited use, is generally a plan of the past. Most adequate compensation plans today include a fixed salary plus compensation for extra sales achievements in order to give the salesman security and a regular weekly income—and they also include such social benefits as hospital insurance, sick benefits, paid vacations, etc.

In lines where there is a considerable difference in the gross profit to the retailer on various items available for men to sell, great care should be given to bonus adjustment that encourages the sale of more profitable items. We are constantly working to show retailers the necessity of recognizing this in their compensation plans and those who do, are showing far better profits per dollar of sales.

Training Is Never Ending

The experienced sales manager knows that training is a never ending process. He knows that he cannot depend on his manufacturer or distributor to hold a few sales meetings with his men on products and expect to have an adequate sales force. The experienced sales manager carefully plans a certain number of training meetings with his sales organization every single week in the year. Of course, he calls on his manufacturer or distributor to help out in some of these meetings but he does not depend on them to take over this most important responsibility. He studies his salesmen's weaknesses and devotes session after session to training where training is needed; to the techniques of selling; to the closing of sales; competitive product information, etc. Carefully and continuously planned sales training work is a most important fundamental in the art of specialty selling and it is a responsibility which no retailer, who wants a hard hitting sales force, can expect to leave in the hands of his suppliers.

One other point regarding training. In most discussions of specialty selling organization, training is emphasized as the one fundamental that produces results more than any other force. I agree with this thinking with one exception: training alone won't do the job. Men can't be trained who are not basically qualified to be salesmen, nor will well-trained men stay on the job if their method of compensation does not allow them to make a good living as a result of their efforts. In other words, training is of greatest importance but alone it will not build and maintain a strong specialty sales organization.

The fifth fundamental is that of stimulation. There is one thing all experienced sales managers agree as being common to the successful specialty salesman—the reaction of his natural competitive spirit to contests. Without exception the best retail sales managers in

our industry make continual use of this means of urging their organization on to greater achievements.

There seem to be certain rules common to the successful application of this fundamental. The first is that a good sales organization can be ruined by too much of this good medicine—the timing in the use of contests is most important. The second thing is to get constant variation into the type of contest used and into the purpose for which the prizes are given. Used continually on sales quotas, they soon lose their appeal. But varying between sales quotas, quotas established for calls on users, number of night calls, and so on, they continue to produce extra results. Another rule is that contests should be for a short duration—preferably for a few days or a week. It is very hard to keep interest at a peak in a contest that runs for a long period of time.

Probably the most important principle involved with the use of this kind of stimulation is the necessity for paying prizes promptly on the day the contest finishes and paying them in cash, or merchandise, or whatever is promised—but never in credits to the man's account or by some other indefinite means. Smartly conceived, carefully followed contests among retail salesmen have produced extra volume beyond calculation among specialty sales organizations in the appliance industry.

Now we have constantly referred to the management phase of direction. There is still another essential factor in the proper direction of retail sales organizations. I think it has been best described as "mother instinct." The sales manager takes a close personal interest in the salesmen working for him. He senses when the salesman is in trouble and takes time to find out why; he is patient with the salesman who needs patience; he is helpful to his men who need assistance. But at the same time he has the ability to get tough with the man who needs to be driven for best accomplishments. A good retail sales manager takes a personal responsibility for the success of every man in his crew. He fulfills that responsibility by doing whatever is necessary with that man to make sure that week in and week out his salesman makes money.

To me the art of specialty selling reaches its peak in the sales organization directed by a man with this ability.

Now, to summarize:

1) We have today in selling in America only about 85 per cent of the number of sales people needed to move the products our plants are ready to produce and the American public are capable of buying, and willing to buy.
2) The power of this sales organization is well below that figure. How much nobody knows, due to the loss of new blood and the lack of new training during the five war years.
3) The job of rebuilding the specialty selling part of America's sales power is primarily dependent on rebuilding an organization of specialty sales managers.

In the appliance and heating field a great many of the retailers represent many different manufacturers. All of us in manufacturing must recognize the essentiality of capable retail sales management to our future success, and we put our shoulders to the wheel to help American retailers re-establish an organization of men who understand thoroughly the art of specialty selling. If we do these things, I am sure we can continue and perhaps increase the pace at which we have used the art of specialty selling to make American homes the most convenient, the most comfortable, and the most liveable homes in the world.

◈

Wallace F. Hastie, assistant manager, Chicago sales office, American Radiator & Standard Sanitary Corp., has been named manager of the San Francisco sales office. He joined the Boston sales office of the company in 1938 and remained there until his appointment to the Chicago office two years ago.

Samuel J. Levine, manager of engineering, General Electric Co., Air Conditioning Dept., Bloomfield, N. J., has been granted his seventh patent for an improvement in oilburner compressors. The refinement calls for elimination of floats. Mr. Levine, an M.I.T. graduate, joined the company in 1928 and was formerly managing engineer, automatic heating equipment division.

E. D. Bransome has been elected to the positions of chairman of the board and president, Mack Trucks, Inc., New York 1, N. Y. The positions were relinquished by L. G. Bissell and C. T. Ruhf on June 6. For the last five years Mr. Bransome has been a director of the company and since 1935 has been president of Vanadium Corp. of America. He will continue with Vanadium as chairman of the board and member of the executive committee. Messrs. Bissell and Ruhf will continue as members of the Mack board, with Mr. Ruhf remaining with the company as a consultant.

George L. Downs has been placed in charge of the transformer operation, Raytheon Mfg. Co., Waltham, Mass. Mr. Downs during the war headed Raytheon's production test department and in 1945 took charge of the methods and cost estimating department.

Frederick H. Blackmore, vice president in charge of manufacturing, United States Radiator Corp., Detroit 26, Mich., has retired after 49 years of service with the company and one of its predecessors. His family were among the founders of U. S. Radiator and still continue as stockholders. Mr. Blackmore started his career at the West Newton, Pa. plant of U. S. Radiator Co. in 1901 in the foundry and subsequently worked in all departments of the plant. He served as manager of various plants and in 1928 transferred to the general office in Detroit as manager of the operating department. In 1943 Mr. Blackmore was elected to the position he held at the time of his retirement.

Wayne McCarthy, formerly branch manager at Des Moines, Ia., has been promoted to the position of north coast regional manager, Minneapolis-Honeywell Regulator Co., Minneapolis 6, Minn., succeeding John B. Banks, resigned. *Wayne E. Petersen,* who has been on the company sales staff in Des Moines, has been advanced to the position of branch manager. Mr. McCarthy will have headquarters in Portland, Ore., and his territory will include the areas surrounding that city, as well as Seattle, Spokane and other Washington and Oregon cities. Other branch offices are located in Seattle and Spokane.

Warm Air Furnace Oil Combustion

Proper Firing Needed for Silent, Clean, Efficient Heating

by
J. W. Schulz

To SUCCEED at furnace-duct heating today, the heating contractors in the many cities that are oil-heat-minded must do well at solving oilburner installation and service problems. A great sales lift is being given to furnace-duct heating at the present time through offering home builders and home owners forced-air systems which feature oil firing at its best.

Both know-how and patience are needed, however, to obtain exemplary burner performance in certain furnace systems. The furnaces of exceptionally low capacity, which are increasingly popular, require special care in firing. In addition, warm air furnaces have a way of showing up poor oilburner performance.

Many of the owners of the new homes heated by furnaces are being forced by the high prices of the homes to live according to strict budgets. That makes them eager to learn quickly all about their fueloil expenses, and quick to complain about seemingly high oil bills. To avoid trouble from such owners, farsighted dealers and service men are making certain from the start to oil-fire at the highest efficiencies practicable for the particular equipment.

Excessive sound, or noise to use the owners' word for it, is a problem in many homes heated by furnaces. The homes being built today are small compared to those in which most burners were installed in bygone years. The occupants are close to the burners with the result that excessive sound becomes doubly irritating.

The small size of the new home heated by a furnace, the increasing tendency to use the furnace room for many purposes, and the air circulation feature of modern systems all work towards bringing out the worst penalties of incomplete combustion. Effort therefore is needed to keep the furnace rooms free of even traces of oil odors, soot, and products of combustion.

These points boil down to insuring owner satisfaction by making certain to achieve (1) minimum oil consumption, (2) smooth, quiet oilburner operation, and (3) complete freedom from oil odors, soot, and smoke. The problem boils down still further because all three objectives are attained by arriving at excellent combustion of fueloil in the furnace. Fundamentally, every warm air furnace should be fired by a flame which is efficient, silent or so quiet as to cause no complaints, and clean-burning beyond reproach.

The warm air furnace which on a particular installation causes complaints often brings up the question of whether design and construction, for which the furnace manufacturer is responsible, or installation and service work, are to blame. This is particularly true with respect to combustion difficulties. But regardless of the answer to this question, usually the installer of the furnace faces the need to take suitable steps to make the equipment acceptable to the home owner. The installer might, as another factor, be forced to adapt a furnace or furnace-burner unit to a home or heating system decidedly different than typical, or to an unusual fueloil or an unusual draft condition.

Firebox design, covered by Diag. 1, is then ordinarily a problem to be handled by the manufacturer of a furnace intended for oil-firing at a certain rate and shipped either with a firebox or with exact instructions for the design and construction of the needed firebox. Actually, however, a dealer wisely takes an interest in firebox design where justified owner complaints can be ended only by improving or altering the design. Poor combustion often is ended most simply and inexpensively by using a reasonably small amount of time and material to improve the firebox.

Every service man responsible for the starting and combustion testing, and the maintenance of burners firing warm air furnaces, should be a master of the principles of such combustion problems as are covered by Diag. 1, for the man not well versed in these principles cannot diagnose the trouble he is bound to encounter on certain installations. Correct diagnosis of a trouble naturally and inevitably precedes arriving at the proper cure for the trouble. If you are facing trouble caused by wrong design and construction of the firebox, make certain of this. Then improve the firebox if you aim to end the trouble.

To do a shipshape job of handling a complaint related to excessive fueloil consumption and allegedly low efficiency of an oil-fired furnace, concentrate on the stack loss. True, many other factors can cause high fuel bills, including the poor heat-holding properties of the house, poor design of the heating system, and even the habits of the occupants. But in handling oilburner troubles, you look for high stack loss as the cause of high oil consumption.

Evaluate the stack loss by taking CO_2 and stack temperature readings and using a chart or table that gives the stack loss in terms of these readings. For reasons that will be emphasized presently, you'd better take a reading of chimney smoke at the same time.

If the CO_2 is low, say below 8% or 10% as you find the burner adjusted, do your best to obtain a higher reading. Adjust the burner to be on the verge of smoking, using your smoke indicator to make certain you are not setting the flame so rich as to invite complaints about chimney smoke, odors, or sooted flues, and find out the highest feasible CO_2 reading for the particular installation. If the CO_2 reading still is lower than your standards permit, check on these common causes of inefficient combustion:

1. Air leaks. Use a candle to locate these with the burner running and the smokepipe draft regulator set for the highest draft obtainable. Seal in a shipshape manner any leaks you find.

2. High draft. Excessive draft gives

an over-fire draft reading higher than is needed to avoid the troubles of insufficient draft. Aim for over-fire draft of about .02" for most installations. Use lower draft only if you know this will not lead to the troubles of insufficient draft (i.e., pulsation which is caused by low draft, or soot, smoke or oil odors in the equipment room caused by the escape of products of combustion from the furnace). Use higher draft only if necessary to avoid the same troubles.

3. Poor atomization. If you suspect that poor atomization of oil by the nozzle is causing the inefficient combustion, you'd better try several brand-new nozzles of slightly different spray angles, and perhaps of both the full-cone and hollow-spray types. Installing a brand-new nozzle gives you confidence that one of the tiny atomizing slots of the nozzle is not partly plugged. If you aim for top performance, don't try to clean old nozzles on the job.

4. Improper air handling. Make certain you are using to maximum advantage any adjustable air-handling parts in the gun tube of the burner. If the burner's gun tube air-handling parts do not give an efficient flame of the proper shape, consider switching to different air-handling parts.

5. Overall condition of the oilburner. A burner in exceedingly poor condition should not be expected to perform at high efficiency. Check to make certain that the blower wheel is not plugged with dirt, for example. For modern combustion heads, the static pressures given by a clean blower wheel are needed to provide efficient burning. Check to make certain that the gun tube of an old burner is free of carbon and oil-soaked dust. Many burners which have been in use more than five years need extensive overhauling to enable them to burn oil efficiently. It's wiser to replace some of the older burners than to spend time trying to make them like new or bring their performance up to the level of modern burners.

6. Firebox shortcomings. Your efforts to produce high CO_2 readings through giving attention to the previous five items may convince you that, as you might have suspected earlier, the firebox is to blame for the poor combustion. Check on the firebox faults listed in Diag. 1.

Where high stack loss is related to a high stack temperature reading, give attention to these items:

1. Double-check for needlessly high gph rate. Make certain you cannot provide good heating on coldest mornings with a gph rate 25% to 50% lower than is being used.

2. Try doubly hard to increase the CO_2 reading, for at high stack temperatures a slight increase in CO_2 gives a considerable increase in efficiency, as a stack loss chart or table shows.

3. Dirty heating surfaces. It's messy work, but checking the flue passages for sooting is important. A vacuum cleaner made especially for furnace cleaning is a Must for certain furnaces; the flues simply can't be cleaned thoroughly without such a cleaner. The stack tem-

Diag. 1—*Firebox faults often to blame for failure to arrive at efficient, silent, clean combustion.*

A—Low Side Walls

Side walls only 12" high are too low for best results even at lowest gph rates for pressure burners. Incomplete combustion is the immediate result of low side walls on most installations, CO_2 readings of 12% to 13% not being obtainable together with satisfactory smoke readings, but flame noise and high oil consumption also result. To correct the trouble, make the side walls 16" or 18" high using lightweight insulating firebrick or other suitable, easily-installed material. Or try installing an over-fire baffle made of metal or refractory material, as this may give the effect of higher side walls.

B—Excessive Floor Area

Flame and firebox temperatures which are unsatisfactorily low are the result of excessive length or width of the firebox. Make a long firebox so short that carbon would build up on the back wall if it were shorter.

C—Excessive Nozzle Height

With the firebox good except for excessive nozzle height, often the flame makes excessive sound that can be ended by the service man in a matter of minutes. Reduce the nozzle height by placing firebrick on the firebox floor. Study the effect using a flame mirror. Don't overdo with the result that oil droplets impinge on the floor and cause carbon formation.

D—Firebox Cool—for any reason

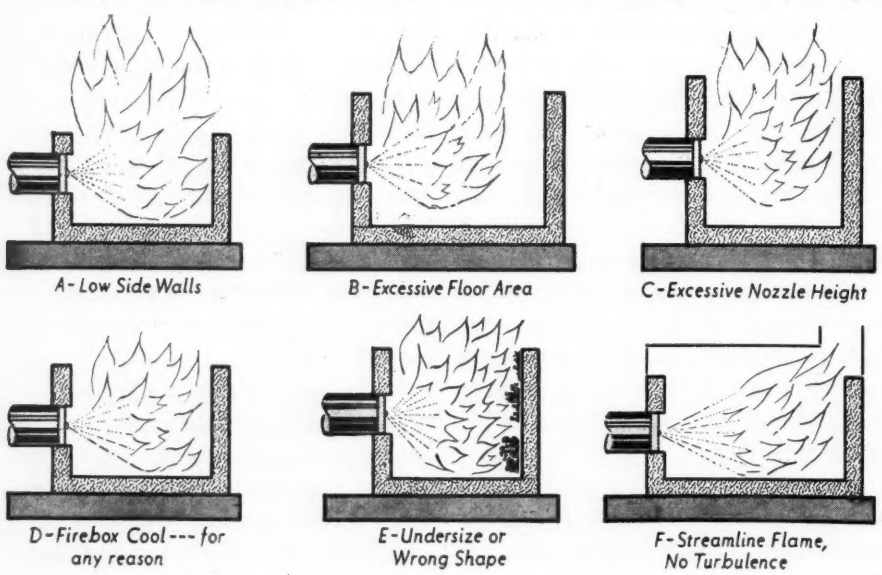
Even if the firebox is exceptionally good, combustion quality will be low if the flame temperature is low for any reason. One reason for low flame temperature is the loss of excessive radiant heat from the heart of the flame to unusually cool direct heating surfaces of the furnace. Or the flame tips may sweep into furnace spaces which, too cool for completion of combustion, chill them rapidly and cause soot, smoke, and oil vapor to be present in the flue gases in excessive amounts. Check with the furnace's circulating blower kept idle, as this reveals if increasing the temperature of the direct heating surfaces gives a decided improvement in combustion. Make CO_2 and smoke tests. Remedies lie in over-fire baffles, corbel or step-in designs for firebox front and back walls, and altering the flow of air through the furnace jackets to raise the temperatures of the direct heating surfaces.

E—Undersize or Wrong Shape

Carbon forms if the side walls or back wall of a firebox are too close to the heart of the flame. Where the firebox shape cannot be changed, try changing the shape of the flame. You may have to install entirely different air-handling parts in the gun tube of the burner, as certain air-handling parts give wide or narrow flames and cannot be adjusted to give different flame shapes. Shifting to a nozzle of narrow or wide spray angle affects the flame shapes of most burners only slightly, and often is not enough by itself to obtain a special flame shape.

F—Streamline Flame, No Turbulence

A flame which is streamlined or laminated usually gives smoke, soot, and oil odors, and cannot produce high CO_2 readings together with satisfactory smoke readings. The cures may lie in step-in or corbel design for the firebox back wall, a switch to gun tube parts that give turbulent combustion, or installing an over-fire baffle.


A - Low Side Walls
B - Excessive Floor Area
C - Excessive Nozzle Height
D - Firebox Cool --- for any reason
E - Undersize or Wrong Shape
F - Streamline Flame, No Turbulence

Diag. 2 — *Methods for Ending Complaints Caused by Excessive Sound.*

A—A favorite method for eliminating sounds that originate at the smokepipe is to apply a generous thickness of asbestos cement. To secure maximum results, some dealers first punch holes in the smokepipe, then apply a one-inch thickness of rock wool, finally give a finish-coat of asbestos. As the sound-deadening efforts will make the pipe heavy, support it properly.

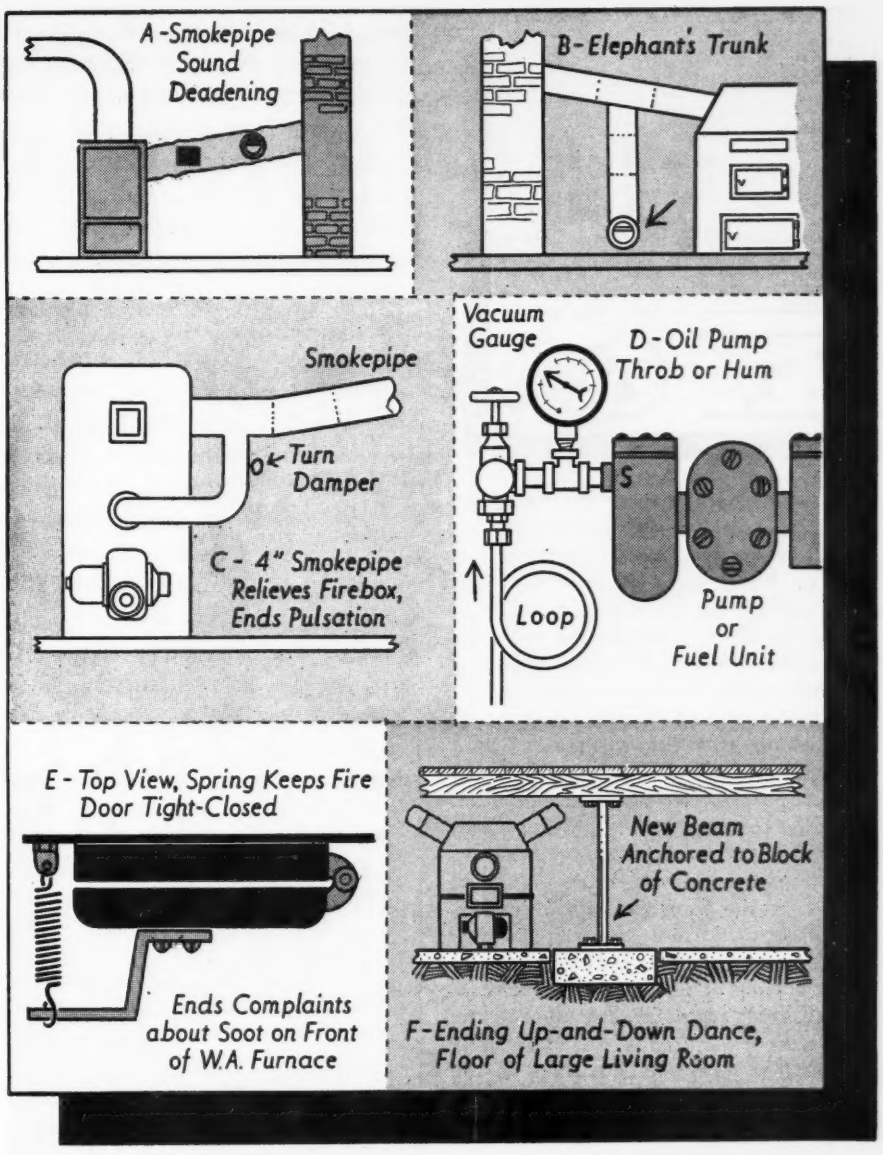
B—If flame noise comes from a swinging-disc type draft regulator, install the regulator at the bottom of a vertical piece of smokepipe which is connected to the original smokepipe by a tee faced down. At the bottom of the vertical smokepipe is an elbow, of course. Often this idea is coupled with applying sound-deadening material to the smokepipes.

C—Where other methods of ending severe flame pulsation fail, one dealer runs a four-inch relief line from the flame observation door to the smokepipe. A turn damper or gravity-operated swing damper is used to prevent excessive short-circuiting of the hot gases from the combustion space of the furnace to the chimney. The rig is not pretty, and the dealer uses it reluctantly, only after all efforts at ending the trouble are ruled out.

D—Don't put a considerable vacuum on a fuel unit not fitted with a return line! But if you have pump hum or pump throb trouble on a job fitted with a return line, use a vacuum gauge to find out if the answer lies in a slightly increased vacuum at the pump inlet connection. The "quietening loop" used by some dealers consists of a length of ¼" O.D. copper tubing (about 18" or 24" total length) connected in the suction line to increase slightly the vacuum the pump develops.

E—To end the escape of sound and soot from the loosely-fitted doors of certain furnaces, one dealer adds this spring arrangement. Bolted to the door is a piece of heavy strap iron, properly bent to shape beforehand.

F—As normal starting and stopping of the flame caused the springy floor of this large living room to swing up and down, the dealer pointed out to the home owner that the house could stand additional rigidity. The beam that steadies the floor was anchored, in accordance with the burner dealer's instructions, to a block of concrete that weighs 600 lbs.


A-Smokepipe Sound Deadening
B-Elephant's Trunk
Smokepipe
Turn Damper
C-4" Smokepipe Relieves Firebox, Ends Pulsation
Vacuum Gauge
D-Oil Pump Throb or Hum
S
Loop
Pump or Fuel Unit
E-Top View, Spring Keeps Fire Door Tight-Closed
Ends Complaints about Soot on Front of W.A. Furnace
New Beam Anchored to Block of Concrete
F-Ending Up-and-Down Dance, Floor of Large Living Room

perature may be dropped by 300° by a thoroughly good flue-cleaning.

4. Flue baffles. Where all other steps fail to lower an excessively high stack temperature, baffling the flues may do the trick. Experts use special baffle designs and take good precautions against getting into trouble by over-baffling. Don't wind up with insufficient over-fire draft! Don't wind up with a furnace that will give trouble when a layer of soot ¼" thick is deposited on the secondary heating surfaces!

5. Firebox design. Poor firebox design and construction can cause high stack temperature as well as low CO_2 readings, so check on the firebox shortcomings listed in Diag. 1.

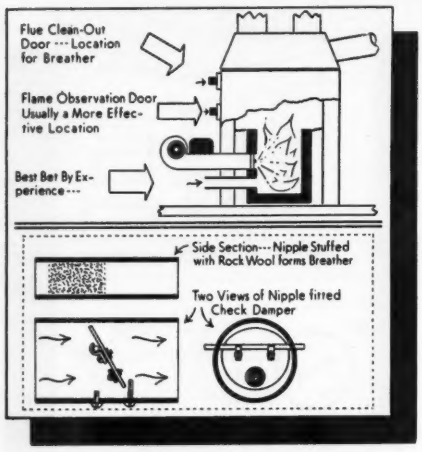
If the owner's complaint relates to noise given by the flame all the while the burner operates, the first step is to give thorough attention to normal tune-up work. Don't fail to try five or six different nozzles in your efforts to quiet the flame. Try nozzles of different spray angles and spray characteristics. Unless you are determined to use precisely 100 pounds atomizing pressure for all your burners, you'd better try pressures as low as 70 or 80 pounds and as high as 125 to 150 pounds. If you are in doubt regarding the advisability of using unusually low or high atomizing pressure in the particular burner, obtain the burner manufacturer's advice regarding the problem.

Fight the flame noise also by giving thorough attention to the air-handling parts in the burner's gun tube.

The ignition spark affects the flame sound of burners, some models giving a quieter flame with the spark on, others burning more quietly with the spark off. On a trouble job, make certain to try both continuous and intermittent ignition.

Diag. 2 covers six methods for ending flame noises, and deals with noises that come only with starting and stopping, as well as with noises that continue all the while the flames are burning.

Diag. 3 gives details of using breather pipes to end flame noise and starting and stopping pulsation. Where rock wool is used, it is held in place in the nipple by suitable pieces of heavy screening, which in turn is held in place by heavy steel wires that go through holes drilled in the nipple. The rock wool should be as far from the heat of


Flue Clean-Out Door --- Location for Breather
Flame Observation Door Usually a More Effective Location
Best Bet By Experience---
Side Section--- Nipple Stuffed with Rock Wool forms Breather
Two Views of Nipple fitted Check Damper

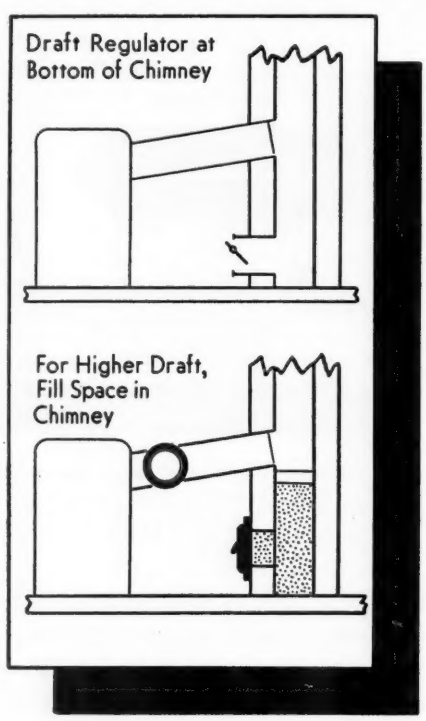
Diag. 3—*Where leaving the flame observation door open a fraction of an inch stops starting and stopping pulsation, or flame noise or pulsation that continues all the while the burner operates, a breather arrangement will cure the trouble. The breather may consist of a nipple stuffed with rock wool to prevent the escape of carbon particles. A 1¼" nipple may lick the trouble of a 1.0 gph furnace pulsating mildly. A larger nipple, or two or three small ones, is needed for more severe pulsation and for higher gph rates. Install the breather in a flue clean-out door, in the firing door, or in the front wall of the firebox. The firebox location is most effective. The swinging-disc check damper, shown at the bottom of the drawing, resembles a small draft regulator. Installed in the front wall of the firebox, it is more effective than a rock wool breather of the same size.*

the flame as is feasible.

The check damper device shown in Diag. 3 is being used by many dealers, not only to eliminate flame pulsation but also on large installations to permit firing hard enough to carry the loads, as this device can be used principally to provide combustion air by natural draft. A dealer can use a small draft regulator of the swinging-disc type, instead of bothering to design and make this type of breather. If he makes the device, he should make certain the disc fits the pipe so loosely it does not bind in any position. The drawing shows two screws as stops. The lefthand screw prevents the damper from opening when the burner lights, thus prevents products of combustion from blowing out into the equipment room. The right-hand screw prevents the damper from opening wide enough to bind against the inside wall of the pipe.

Two chimney tricks which serve entirely different purposes are shown in Diag. 4. In the upper part of the drawing, installing the draft regulator low on the chimney prevents flame sound from issuing from it. The effect is the same as is given by the elephant's trunk idea of Diag. 2. Low in the drawing is an idea for obtaining higher draft. This has raised chimney drafts from the unsatisfactory low of .02" to the usually satisfactory level of .05".

To insure the satisfaction of the owner of a new oil-fired furnace, an equipment dealer must know 101 details related to solving combustion problems. It is folly to assume that all problems related to arriving at silent, clean, efficient combustion have been solved in manufacturers' laboratories. These problems have not been solved by manufacturers. To solve the problems of a particular headache installation, more than a little Know-How on the part of the equipment dealer still is needed. Certain dealers are complaining today that they cannot succeed in arriving at silent, clean, efficient heating easily on every installation. Other dealers handling the same make of equipment find it entirely satisfactory. The difference lies in the Know-How and determination of the dealers. The dealer who is getting exceptional results today usually is putting his heart and soul into making oil-burners perform properly!



Diag. 4—*Where the chimney draft is good and a swinging-disc type draft regulator is used, the regulator can be installed at the base of certain chimneys, perhaps in place of a clean-out door used previously. The upper drawing shows this. The idea is to eliminate chances of flame noise coming from the regulator when its disc is open.*

To increase the draft given by a poor chimney which has a clean-out door that opens to a large space at the base of the chimney, fasten the door closed and fill the space with sand to the level of the bottom of the smokepipe. For the best job, top off the sand with concrete to eliminate any chances of air leaking through the sand.

◈

Richard R. Gang heads the newly-established Dealer Contract Dept., Viking Air Conditioning Corp., Cleveland 2. Ohio. The object of the new department is to aid jobbers and dealers by contacting dealers through their jobbers. Mr. Gang, who will work directly with dealers, is mapping out a program to cover all phases of dealer operations connected with blower package use, installation information, sales aids, merchandising and display. Surveys are now being made in Cleveland and upon completion, Mr. Gang and his department plan to contact dealers throughout the country.

Peter Storti has been named rotary oilburner development engineer, Iron Fireman Mfg. Co., Portland, Ore. He will make his headquarters at the home office and will continue development of industrial oilfired equipment. For 18 years he was with Ray Burner Co. in various capacities, became general manager of combustion equipment division for Enterprise Engine & Foundry Co. in 1943 and in 1945 joined Dalmo Victor Co. in the same capacity.

L. E. Thompson has been appointed manager of product service and renewal parts sales, Air Conditioning Dept., General Electric Co., Bloomfield, N. J., according to H. B. Donley, manager of marketing of the Department. Mr. Thompson will continue his activity as manager of renewal parts and also will take responsibility for the activities of the headquarters field engineering group.

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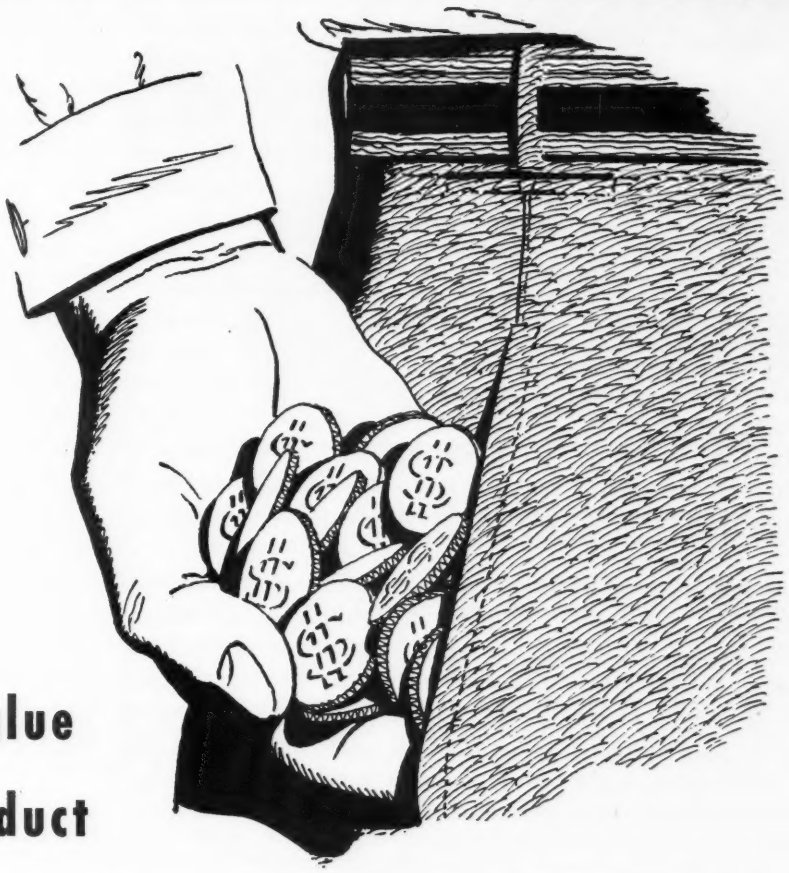

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More and Hotter Water

A Review of the Reasons for Horizontal Storage Tanks

by
George H. Lippencott
and
George H. Lippencott, Jr.

WE'RE IN HOT WATER again, or more accurately cold water, on many of the indirect domestic hot water installations made recently. Great strides have been made in the heating industry in the last ten years, but there has also been some back sliding in evidence.

Recently our attention has been called to a trend back to the vertical storage tank for domestic hot water on an indirect system as shown in the accompanying sketch. A short analysis of this system will bring to light its shortcomings.

A gravity system for heating water in the storage tank depends for circulation on the fact that a gallon of heated water weighs less than a gallon of cold water. The cold water tends to drop in such a system, and displace the heated (lighter) water. This process will continue in the system until all the water above the point of heat injection (heater) is brought to a temperature close to that of the boiler water temperature. At this point the system is balanced, since there is no cold (heavy) water, commonly called the head, above the lighter water in the heater. The heavy line, No. 2, indicates the lowest point to which the heated water will reach in the system before gravity circulation virtually ceases.

The water below this point remains relatively cold. This has the effect of reducing the volume of the vertical storage tank 25% to 33-1/3%. The result, of course, is that instead of the entire volume in a 40 gallon tank, for example, being heated to a satisfactory temperature, only about 30 gallons are heated to a high enough temperature for domestic use.

No. 3 in the sketch shows a horizontal tank properly installed. On this hookup the heater, (point of heat injection) is the lowest point in the system, and, since all water above this point can be heated and circulated as explained above, the entire tank can be brought to a satisfactory temperature as shown in sketch.

No. 4 in the sketch shows the sediment line properly connected by being dropped down with the center outlet of the tee made up on the drop.

No. 5 indicates the cold water feed connected to the run of the tee. This connection directs the flow of cold feed water to the heater rather than into the tank. The reason for this connection is common sense. The cold water is directed to the heater and then to the tank rather than to the tank first. In this way the cooling effect on the stored water is reduced and a cold water by-pass condition is prevented.

No. 6 indicates the proper location of the fixture or house line. Its location at this point tends to eliminate by-passing of either the feed water or the heated water from the circulating line to the house line. The gravity type indirect hot water heater does not have sufficient heat transfer capacity to raise water under pressure to a sufficiently high temperature for domestic service instantaneously.

No. 7 indicates the heater coil located in the boiler water temperature zone

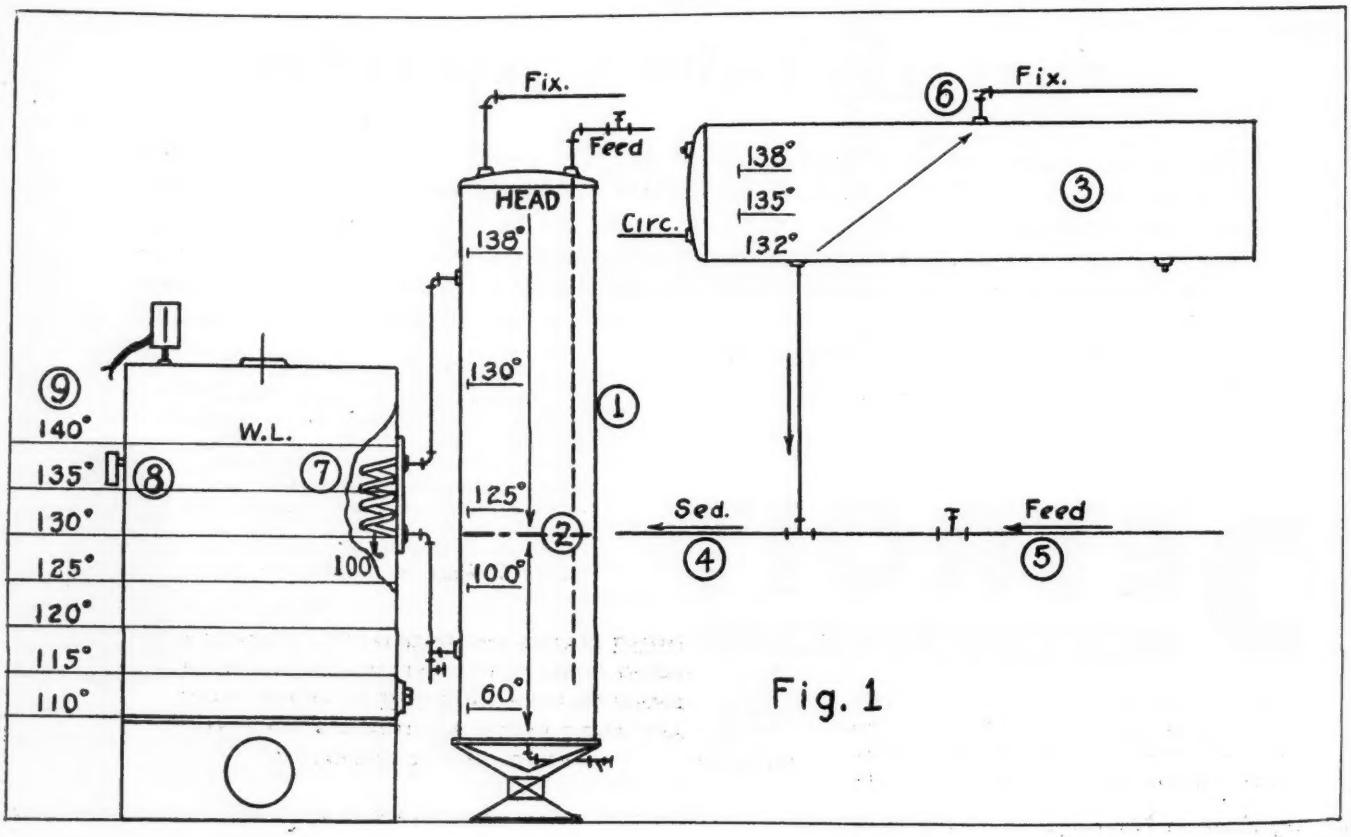
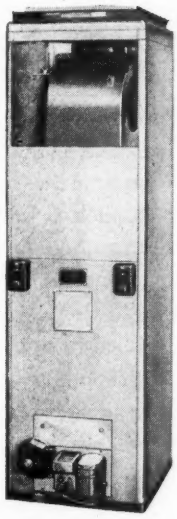


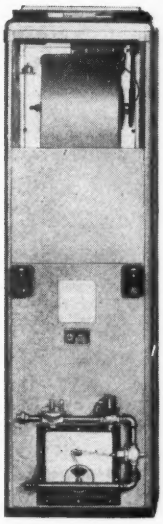
Fig. 1

Luxaire always "a Step Ahead" NOW! The Counterflow

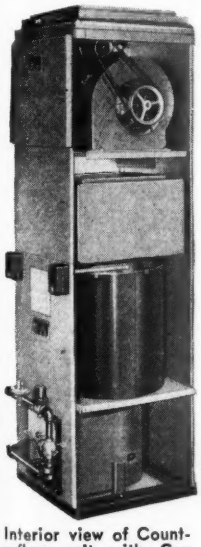
Utility Air Conditioning Unit for GAS ... for OIL



No. VHC-75-E, Oil Counterflow Air Conditioning Unit 75,100 BTU at Discharge Outlet.



No. GHC-95-E, Gas Counterflow Air Conditioning Unit 76,000 BTU at Discharge Outlet.



Interior view of Counterflow unit with Gas Burner installed.

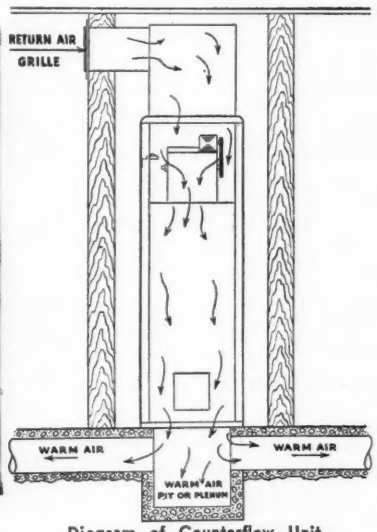


Diagram of Counterflow Unit In building with Concrete Slab Floor.

For Ranchtype Homes . . . Homes Without Basements

For the house with floor panel heating—warm air pipes imbedded in the concrete slab floor!

For the house with warm air pipes imbedded in the concrete floor slab, but discharging into warm air registers!

For the house with warm air pipes installed in the crawl space under the concrete slab floor and above the ground!

For the thousands of basementless houses and buildings for which architects and builders want the heating pipes in or under the floor, the Luxaire Counterflow Utility Air Conditioning Unit was designed. With blower located at the top of the cabinet, discharging warm air downward through the base of unit into pit or plenum chamber provided in or below the concrete slab, the new Luxaire Counterflow provides a low cost heating plant that requires a minimum of space in houses where space is at a premium.

This new unit comes equipped with either the Luxaire Gas Burner or the Luxaire Pressure Vaporizing Oil Burner and burns either fuel with equal efficiency.

The unit is shipped assembled, ready for the installation of the burner, which can be installed in a few minutes.

THE C·A·OLSEN MANUFACTURING COMPANY

Luxaire HEATING & AIR CONDITIONING UNITS

ELYRIA 12, OHIO

130-140 degrees F. with summer control setting.

No. 8 shows the location of the water temperature control for proper operation of the system. A location away from the heater prevents the cooled boiler water leaving the coils of the heater from cutting the burner in when a faucet is opened. This location is used only with the storage tank system. Since the drain on the boiler heat is small, it is not necessary nor desirable to operate the burner.

No. 9 shows the approximate temperatures obtained in a boiler operating with a 140 degree F. control setting for summer use. With the horizontal tank domestic water of satisfactory temperature can be maintained to the full capacity of the tank. With the vertical tank it is necessary to raise the aquastat setting to 180 degrees F. and maintain that water which can be heated in the tank at a higher temperature in order to offset the smaller volume. From the accompanying chart we can see the wisdom of using the lower setting. The cost of produring a gallon of heated water at 180 degree F. is approximately three times as great as at 140 degree F. These figures are derived from actual test data developed by Walter O. Harvey of Harvey-Whipple, Inc., Springfield, Mass.

The advantages of the horizontal tank installation are therefore:

1. Entire volume of storage tank used for storage of water at satisfactory temperature.
2. Lower boiler water temperature for satisfactory domestic water temperature, resulting in lower costs per gallon of water heated in the *summer months.*

We cannot recommend too strongly attention to the points outlined above. Following this installation plan will eliminate costly changes and dissatisfied customers.

Five-Year Oil Contract Offered Montreal Users

CANADIAN OILHEATING is experiencing a boom such as few members of the industry can remember, according to Montreal reports. The present wave of business is the result of a surplus of fueloils for the first time in the postwar era, and the outlook is so bright some firms are offering five-year contracts to their customers. The demand covers all classes of oilheating equipment.

Present distillate prices are about equal to coal, and heavy oils are selling at prices below coal. There is no prospect that coal prices can be reduced to meet the fueloil level.

One dealer is reported to be selling eight commercial heating jobs a day, an unheard-of level of business for July.

The five-year fueloil contracts carry a cancellation clause if the customer sells his home or moves into other quarters. Users are reported enthusiastic about the guaranteed supply.

New England Trade Rules Issued by Federal Trade

IN AN ACTION forecast by its failure to make arrangements for further hearings after the June 20 hearing, the Federal Trade Commission on June 30 promulgated "Trade Practice Rules for the Oil Heating Industry of the New England States." The Rules are "to become operative thirty days thereafter," or July 30. Mailing of copies of the rules to members of the oilheating industry in the New England states has been started by the Commission. Each copy is accompanied by a printed card which it is requested the dealer sign and return as an expression of his willingness to observe the requirements of the rules in the conduct of his business.

A statement of commission, included as part of printed copies of the Rules, explains their purpose and outlines the procedure following in formulating them. Describing the scope of the rules and the area in which they will apply, the statement reads:

"The industry for which these rules are established is that engaged, in the New England States, in the sale or distribution, at retail or direct to the consumer, and in the installation, servicing, or repairing, of heating systems, including the necessary parts, equipment, or appliances incident thereto, such as fuel tanks, fuel burners, furnaces, boilers, automatic controls, etc. Heating systems as covered under the rules are used for the generation, as distinguished from the distribution, of heat through combustion of domestic and industrial fuel oil. Included also in the industry's business is the sale and distribution, at retail or direct to the consumer, of fuel oil for consumption in heating systems of the type described. Members of the industry are the persons and concerns engaged in the above-described business in the New England States."

Because of the widespread interest and controversy provoked when the rules were proposed and during Federal Trade Commission hearings, the Rules are reproduced below in full.

THE RULES

"Being designed to foster and promote the maintenance of fair competitive conditions and protection of the public interest, the rules are to be applied to such end and to the exclusion of any acts or practices which suppress competition, fix or control prices through combination, agreement, or conspiracy, or which otherwise restrain trade.

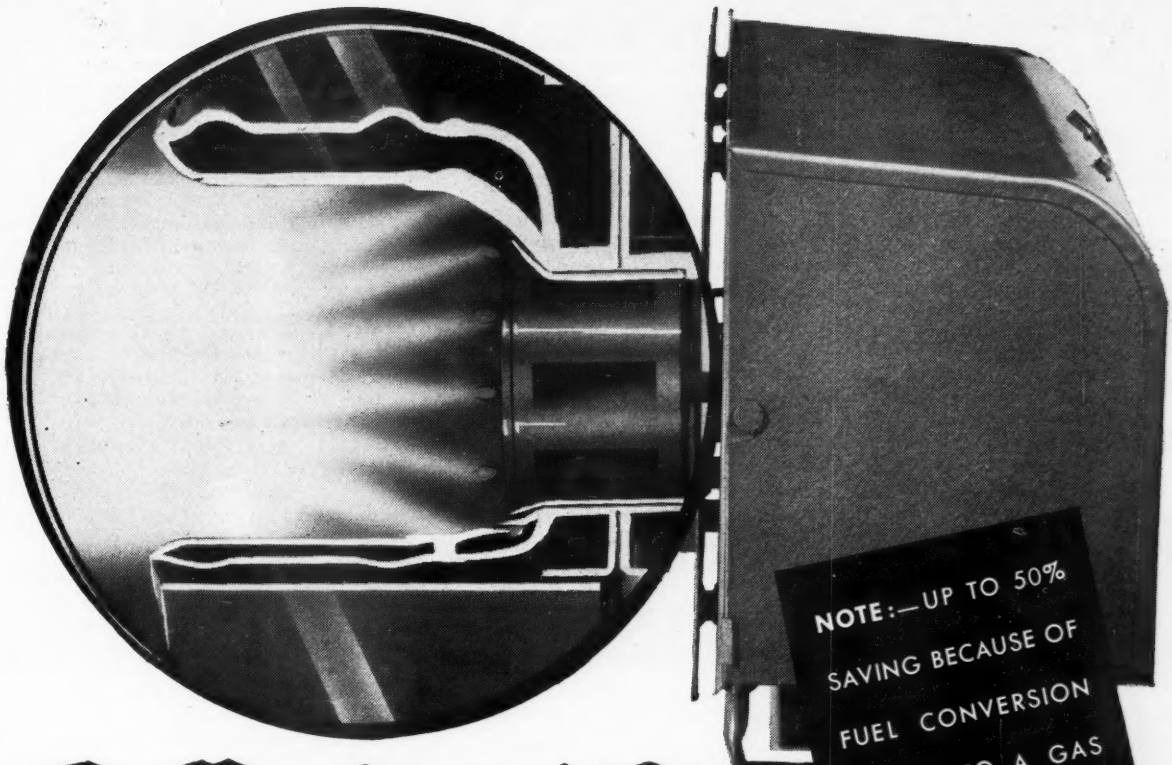
GROUP I

"The unfair trade practices embraced in the Group I rules herein are considered to be unfair methods of competition, unfair or deceptive acts or practices, or other illegal practices, prohibited under laws administered by the Federal Trade Commission; and appropriate proceedings in the public interest will be taken by the Commission to prevent the use, by any person, partnership, corporation, or other organization subject to its jurisdiction, of such unlawful practices in commerce.

Cost of Heating 200 Gallons of Water*

	Boiler Water Temperature	*Burner Run (Hrs.)*	*Gals. Oil Used*	*Cost @ 6.5¢*	*Gals. Per 1¢*
Test 1	180°	1.65	8.25	53.6¢	3.73
Test 2	170	1.50	7.50	48.8	4.10
Test 3	160	1.24	6.21	40.4	4.94
Test 4	150	1.04	5.19	33.7	5.93
Test 5	140	.82	4.11	26.7	7.49
Test 6	130	.63	3.16	20.5	9.75

*This is a condensation of a table which first appeared in the article "Where Do You Set Your Aquastat," by Walter O. Harvey of Harvey-Whipple, Inc., in the July, 1939 issue of OIL HEAT. Note that oil then was 6.5 cents per gallon, and this domestic burner was fired at 5 gph.



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Converts Oil to a Gas

THROUGH SAME BURNER HEAD—BURNS BOTH DOMESTIC OIL and GAS of any type

THE NEW, REVOLUTIONARY Jetronic FUEL BURNER

Exclusive Advantages—The ability of the Jetronic Fuel Burner to burn oil as gas is revolutionary. And it is all accomplished prior to ignition. The fuel oil is completely converted into a gaseous mixture in a special design pre-heated chamber. The hot gas is then mixed with the right amount of air with micro-accuracy by the Jetronic Air Turbulator and automatically ignites. The gas burns with an entirely smokeless, crystal-white, 2400°, super-hot flame . . . all carbon, sulphur and ferrous oxides found in fuel oil are completely consumed. It's pure —a new kind of heat, 700 degrees hotter than conventional type burners, and completely free of smoke, soot and odor.

Instant Conversion from Oil to Gas—is accomplished automatically by a trouble-free switch. Because Jetronic burns oil like gas, it burns gas too, without any change whatever. The Jetronic Fuel Burner makes the user secure—two fuels—one burner for both. And . . .

IT CAN BE INSTALLED IN ANY TYPE OF HOME HEATING PLANT!

WRITE for complete information, literature and dealership franchise

Jetronic

Manufactured by Consolidated Industries, Inc.
Lafayette, Indiana

RULE 1—MISREPRESENTATION AS TO AVAILABLE SUPPLY OF FUEL OIL OR OTHER INDUSTRY PRODUCTS.

"It is an unfair trade practice for any member of the industry to use, or cause or promote the use of, any false or deceptive representation, in advertisements or otherwise, as to the present or future availability or adequacy of supplies of fuel oil or other industry products to meet the needs of users or prospective users.

"Nothing herein shall be construed as inhibiting an industry member from expressing opinions as to the probable adequacy of supplies of fuel oil or other industry products when such opinions are based on information of authoritative and reliable character which the industry member honestly believes and when, in conjunction with the expressed opinion, the industry member makes disclosure of the source of information on which he is relying and it is made clear that he is expressing an opinion based on such information.

RULE 2—DECEPTIVE ADVERTISING AND MISREPRESENTATION.

"I. It is an unfair trade practice for any member of the industry to use, publish, circulate, or cause or promote the use, publication, or circulation,

"(a) of any false or deceptive price quotations, price lists, or terms, or conditions of sale; or

"(b) of any representation which is false or tends untruthfully to indicate, by use of title, designation, or otherwise, that any distributor or dealer has been specifically designated by the manufacturer or wholesale distributor to deal in, handle, install, or service a particular brand of industry product, or that any mechanic or other employee used in connection with the installation of or servicing of an industry product has undergone a course of special training; or

"(c) of any false, misleading, or deceptive statement or representation with respect to the grade, quality, performance, construction, composition, design, model, efficiency, safety, or economy of any industry product, or with respect to the origin, manufacture, or distribution of any industry product, or with respect to the installation or servicing of an industry product; or of any statement or representation which is false, misleading, or deceptive in any other respect.

"II. The provisions of this rule shall apply to said false, misleading, or deceptive statements or representations regardless of the medium used for their dissemination, whether by oral or written communication or by radio, newspaper, magazine, trade promotional or advertising literature, or other media, or whether by brand, mark, label, or otherwise.

RULE 3—DECEPTION AS TO REBUILT OR SECOND-HAND PRODUCTS.

"(a) It is an unfair trade practice for any member of the industry to sell, offer for sale, advertise, or otherwise represent, any product of the industry as being new when such is not the fact.

"(b) In the marketing of rebuilt or second-hand products of the industry, or parts thereof, or in the marketing of products containing rebuilt or second-hand parts, it is an unfair trade practice to conceal or fail or refuse to fully and nondeceptively disclose by effective means of identification (such as by tag, label, stamp, or mark firmly affixed to the products, or the immediate containers thereof in which sold and delivered to the consumer, or by invoice, bill or delivery slip accompanying the article and delivered to the purchaser therewith) the fact that such products, or all or certain parts contained therein, are not new, or are used, second-hand, rebuilt, repaired, or refinished after use, such concealment and nondisclosure having the capacity and tendency or effect of misleading the purchasing or consuming public.

RULE 4—MISUSE OF WORD "FREE," ETC.

"It is an unfair trade practice to use the term 'free,' or any other term of similar import or meaning, to describe, designate, or refer to any industry product or industry service which is not given to the recipient thereof without cost and unconditionally.

RULE 5—SELLING BELOW COST.

"The practice of selling or offering for sale industry products below the seller's cost, when pursued with wrongful intent of thereby injuring a competitor and where the effect of such practice is to unreasonably restrain trade, tend to create a monopoly, or substantially lessen competition, is an unfair trade practice.

"This rule is not to be construed as prohibiting all sales below cost, but only such selling below the seller's cost as is resorted to and pursued as a monopolistic practice with the wrongful intent referred to and coupled with the effect of unreasonably restraining trade, tending to create a monopoly, or substantially lessening competition.

"The costs referred to in the rule are actual

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YOU **PROFIT** WITH **SIMPLEX**

SIMPLEX OIL BURNING SYSTEMS are providing outstanding advantages for SIMPLEX dealers in today's highly competitive market.

SIMPLEX, one of the original pioneers in the oil heating industry, gives its dealers a superbly designed, highly efficient line of oil burning systems, perfected over a period of 39 years by experienced mechanical and combustion engineers.

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You, too, should have all the information about the profit-making opportunities.

Fill in coupon, attach to firm letterhead, and MAIL TODAY.

SINCE SIMPLEX OIL HEATING CORPORATION — SIMPLEX — OIL BURNING SYSTEMS — REG. TRADE MARK **1910**

SIMPLEX OIL HEATING CORP.

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Domestic, Industrial, and Custom Designed Oil Burning Systems.

A few choice territories now open to alert, experienced dealers.

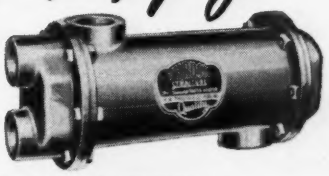
SIMPLEX:

Please send complete facts about SIMPLEX Dealer advantage:

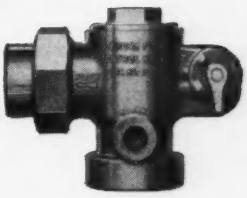
Name .....

Position .....

MAKE *Your Customers Happy!*



THRUSH WATER HEATER



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Install

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FORCED CIRCULATING HOT WATER HEAT!

WHETHER it is a new installation or the modernization of an old hot water heating plant, you can be sure of giving your customers the most efficient automatic heating comfort at lowest cost for fuel when you install a Thrush Water Circulator. Better still, sell the complete Flow Control System which also provides plenty of hot water for kitchen, laundry, and bath the whole year from one heating boiler. The Thrush Water Circulator has many features that assure finer performance and longer life. For more information, ask your wholesaler or write Dept. C-8

THRUSH WATER CIRCULATOR

This colorful booklet tells the whole story of Thrush Forced Circulating Flow Control System. It will also help you sell your customers.

H. A. THRUSH & COMPANY, PERU, INDIANA

costs of the respective seller and not some other figure or average costs in the industry determined by an industry cost survey or otherwise.

RULE 6—COMMERCIAL BRIBERY.

"It is an unfair trade practice for a member of the industry to give, or offer to give, or permit or cause to be given, directly or indirectly, money or anything of value to agents, employees, or representatives of customers or prospective customers, or to agents, employees, or representatives of competitors' customers or prospective customers, without the knowledge of their employers or principals, as an inducement to influence their employers or principals to purchase, or contract to purchase, any industry product or industry service, or to influence such employers or principals to refrain from purchasing the industry products or industry services of competitors or from dealing or contracting to deal with competitors.

RULE 7—USE OF "LOSS LEADERS."

"The practice of selling any industry product or industry service below the seller's cost as a 'loss leader' to induce the purchase of some other industry product or industry service, the sale of the latter being used to recoup the loss sustained on the 'loss leader' product or service so sold, with the capacity, tendency, or effect of misleading or deceiving purchasers, prospective purchasers, or the consuming public, is an unfair trade practice.

RULE 8—DISCRIMINATION.

"(a) *Prohibited Discriminatory Prices, or Rebates, Refunds, Discounts, Credits, Etc., Which Affect Unlawful Price Discrimination.* It is an unfair trade practice for any member of the industry engaged in commerce,[1] in the course of such commerce, to grant or allow, secretly or openly, directly or indirectly, any rebate, refund, discount, credit, or other form of price differential (whether in the form of product installation or maintenance services or otherwise), where such rebate, refund, discount, credit, or other form of price differential, effects a discrimination in price between different purchasers of goods of like grade and quality, where either or any of the purchases involved therein are in commerce,[1] and where the effect thereof may be substantially to lessen competition or tend to create a monopoly in any line of commerce,[1] or to injure, destroy, or prevent competition with any person who either grants or knowingly receives the benefit of such discrimination or with customers of either of them: *Provided, however*—

"(1) That the goods involved in any such transaction are sold for use, consumption, or resale within any place under the jurisdiction of the United States;

"(2) That nothing herein contained shall prevent differentials which make only due allowance for differences in the cost of manufacture, sale, or delivery resulting from the differing methods or quantities in which such commodities are to such purchasers sold or delivered;

"(3) That nothing herein contained shall prevent persons engaged in selling goods, wares, or merchandise in commerce[1] from selecting their own customers in bona fide transactions and not in restraint of trade;

"(4) That nothing herein contained shall prevent price changes from time to time where made in response to changing conditions affecting either (a) the market for the goods concerned, or (b) the marketability of the goods, such as, but not limited to, actual or imminent deterioration of perishable goods, obsolescence of seasonal goods, distress sales under court process, or sales in good faith in discontinuance of business in the goods concerned.

"(b) *Prohibited Brokerage and Commissions.* It is an unfair trade practice for any member of the industry engaged in commerce,[1] in the course of such commerce, to pay or grant, or to receive or accept, anything of value as a commission, brokerage, or other compensation, or any allowance or discount in lieu thereof, except for services rendered in connection with the sale or purchase of goods, wares, or merchandise, either to the other party to such transaction or to an agent, representative, or other intermediary therein, where such intermediary is acting in fact or in behalf, or is subject to the direct or indirect control, of any party to such transaction other than the person by whom such compensation is so granted or paid.

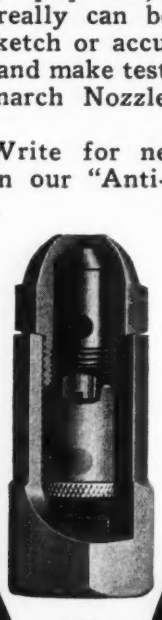
"(c) *Prohibited Advertising or Promotional Allowances, Etc.* It is an unfair trade practice for any member of the industry engaged in commerce[1] to pay or contract for the payment of advertising or promotional allowances or any other thing of value to or for the benefit of a customer of such member, in the course of such commerce, as

[1] As here used, the word "commerce" means "trade or commerce among the several States and with foreign nations, or between the District of Columbia or any Territory of the United States and any State, Territory, or foreign nation, or between any insular possessions or other places under the jurisdiction of the United States, or between any such possession or place and any State or Territory of the United States or the District of Columbia or any foreign nation, or within the District of Columbia or any Territory or any insular possession or other place under the jurisdiction of the United States."

TAKE A MONARCH "TIP"-- AND COMPARE RESULTS!

Most any nozzle will produce some kind of a fire, but —until you have tried Monarch Stainless Steel Nozzles (of a type with spray characteristics matched to your air mixing equipment) you won't know how good they really can be. Advise make of burner and sketch or accurately describe air mixing head and make test *yourself* with the series Monarch Nozzles we recommend.

Pulsation: Write for new Circular No. 51849 on our "Anti-Pulsation" equipment.



F-80

The G-74 Combustion Head

The Monarch G-74 Head embodies an entirely new approach to efficient means for intimately mixing air with atomized oil to provide a highly efficient controlled flame.

Note these features:

1. Suitable for capacity sizes from .75 GPH to 2.50 GPH.
2. Simple to install and has no external "adjustments" to juggle and there is no "guess work" about the settings.
3. Price—Less than the cost of a good fuel unit.

Replacement Valves

Monarch piston type pressure regulating and cut-off valves are available in models to suit most replacement needs. G-49 valves can be mounted in any position and piston will not jam from dirt. Contain no bellows or diaphragm to break or corrode. Rugged Brass bodies, with stainless steel pistons.

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MONARCH MFG. WORKS, INC.

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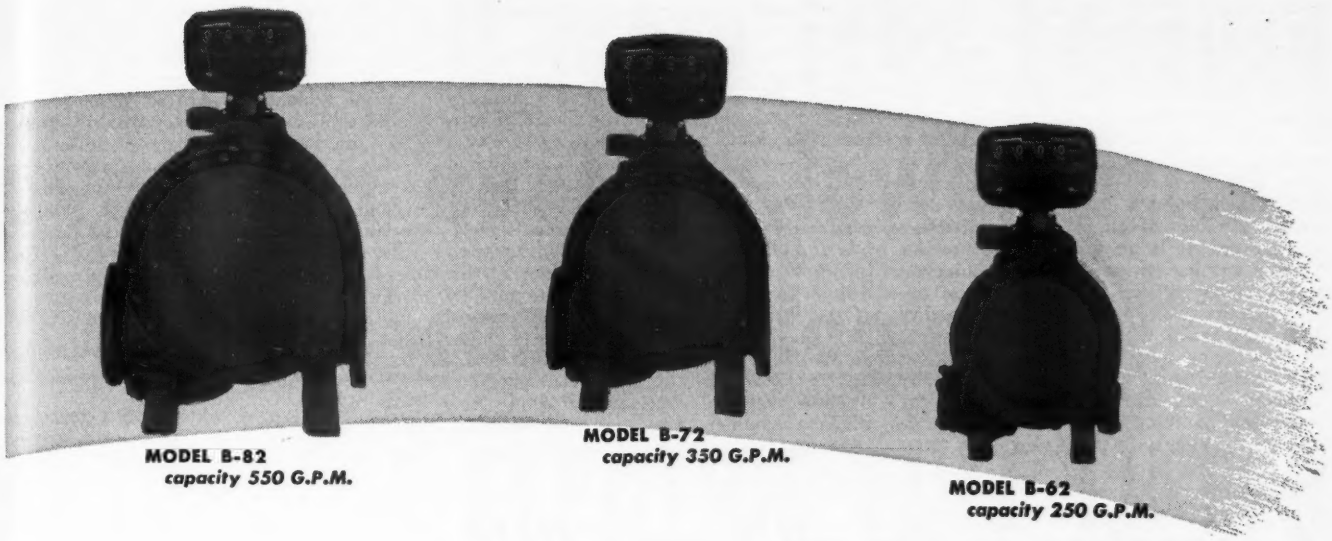

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Entirely new in principle, yet fully tested and proved in hundreds of installations, the new Brodie *All-Steel* BiRotor Meters offer advantages not to be found in any other line of meters on the market. They're built to stay accurate and last longer, with less chance of damage—less maintenance. The readily replaceable and interchangeable metering unit is mounted within a welded all-steel meter housing. Brodie BiRotor Meters can be quickly and easily checked and cleaned, without disconnection from existing pipelines. In complete static and dynamic balance, two gear-synchronized spiral-fluted rotors achieve *true-rotary performance*—with no reciprocating parts to wear or impair metering efficiency. Select the BiRotor Meter that best fits your requirements. Write for full details today.

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—in hundreds of installations

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Insures rugged endurance and freedom from damage or breakage.

PRECISION DRY ADJUSTMENT

Adjustable in positive and definite increments as fine as 1/20 of 1 percent.

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Smooth unrestricted fast flow adds to greater speed and efficiency.

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No complicated mechanism or reciprocating parts to wear.

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Synchronized rotation always in the same direction with no opposing forces.

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compensation or in consideration for any services or facilities furnished by or through such customer in connection with the processing, handling, sale, or offering for sale of any products or commodities manufactured, sold, or offered for sale by such member, unless such payment or consideration is available on proportionally equal terms to all other customers competing in the distribution of such products or commodities.

"(d) *Prohibited Discriminatory Services or Facilities.* It is an unfair trade practice for any member of the industry to discriminate in favor of one purchaser against another purchaser or purchasers of a commodity bought for resale, with or without processing, by contracting to furnish or furnishing, or by contributing to the furnishing of, any services or facilities connected with the processing, handling, sale, or offering for sale of such commodity so purchased upon terms not accorded to all purchasers on proportionally equal terms.

"(e) *Inducing or Receiving an Illegal Discrimination in Price.* It is an unfair trade practice for any member of the industry engaged in commerce,[1] in the course of such commerce, knowingly to induce or receive a discrimination in price which is prohibited by the foregoing provisions of this Rule 8.

"(f) *Purchases by Schools, Colleges, Universities, Public Libraries, Churches, Hospitals, and Charitable Institutions not Operated for Profit.* The foregoing provisions of this Rule 8 relate to practices within the purview of the Robinson-Patman Antidiscrimination Act, which Act and the application thereunder of this Rule 8 are subject to the limitations expressed in the amendment to such Robinson-Patman Antidiscrimination Act, which amendment was approved May 26, 1938, and reads as follows:

'Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That nothing in the Act approved June 19, 1936 (Public, Numbered 692, Seventy-fourth Congress, second session), known as the Robinson-Patman Antidiscrimination Act, shall apply to purchases of their supplies for their own use by schools, colleges, universities, public libraries, churches, hospitals, and charitable institutions not operated for profit.' (52 Stat. 446; United States Code, 1940 edition, Title 15, sec. 13c.)

RULE 9 — GUARANTEES, WARRANTIES, ETC.

"(1) Guarantees which afford purchasers or users substantial and adequate protection, and are fully and fairly stated or disclosed and scrupulously adhered to by the guarantor, are desirable and recommended. It is an unfair trade practice to use or cause to be used any guarantee which is false, misleading, deceptive or unfair to the purchasing or consuming public.

"(2) UNDER THIS RULE GUARANTEES OF THE FOLLOWING TYPE OR CHARACTER SHALL NOT BE USED:

"(a) Guarantees containing statements, representations, or assertions which have the capacity and tendency or effect of misleading and deceiving in any respect; or

"(b) Guarantees which are so used or are of such form, text, or character as to import, imply, or represent that the guarantee is broader than is in fact true, or that the guarantee covers the entire heating system or particular parts thereof which are not in fact covered, or will afford more protection to purchasers or users than is in fact true; or

"(c) Guarantees in which any condition, qualification, or contingency applied by the guarantor thereto is not fully and nondeceptively stated therein, or is stated in such manner or form as to be deceptively minimized, obscured, or concealed, wholly or in part; or

"(d) Guarantees which are stated, phrased, or set forth in such manner that although the statements contained therein are literally and technically true, the whole is misleading in that purchasers or users are not made sufficiently aware of certain contingencies or conditions applicable to such guarantee which materially lessen the value or protection thereof as a guarantee to purchasers or users; or

"(e) Guarantees which purportedly extend for such an indefinite or unlimited period of time or for such a long period of years as to have the capacity and tendency or effect of thereby misleading or deceiving purchasers or users into the belief that the product has or is definitely kown to have greater degree of serviceability or durability in actual use than is in fact true; or

"(f) Guarantees which have the capacity and tendency or effect of otherwise misrepresenting the performance, serviceability, durability, or lasting qualities of the product, such as, for example, a guarantee extending for a certain number of years or other long period of time when the ability of the product to last, endure, or remain serviceable for such period of time has not been established by actual experience or by competent and adequate tests definitely showing in either case that the product has such lasting qualities under the conditions encountered or to be encountered in the respective locality where

[1] See footnote on page 66.

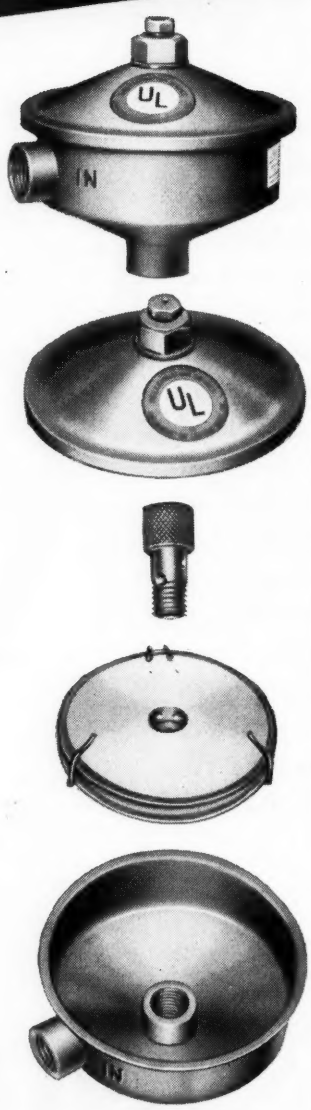
A sensation in the oil burner field

SPARKLER FUEL OIL FILTER...

surface type Model OB

DISTINCTIVE FEATURES

1. A quality filter that will continue to operate under adverse conditions. No sudden stoppage of burner that necessitates night service calls.
2. Lint free filtering element is rayon filter paper that positively eliminates the possibility of lint clogging nozzle screens.
3. Large filtering area in a minimum space. More filtering surface is provided in a smaller space than possible with deep type filter. One set of filter elements will last an entire season in the average home installation.



Surface type filtration as used in the Sparkler Model OB fuel oil filter has been used for many years in industrial filters for the removal of fine microscopic particles of residue. Sparkler surface type filters are used in processing petroleum products such as lubricating oils, heavy diesel oil and other oil stocks.

Now for the first time a fine grained surface type filter is available to the fuel oil trade. A filter that will remove all dirt and deposits found in storage tanks and at the same time eliminate the danger of sluffed off fibre particles clogging screens and causing sudden stoppage of burner.

Write today for special information about service dealer franchise

SPARKLER MANUFACTURING CO. 200 Lake Street, Mundelein, Ill.

you can sell more jobs because you can quote a lower price than competition with

AUTOPULSE ELECTRIC FUEL LIFTER

AUTOMATIC FUEL FEED FOR OIL FIRED SPACE HEATERS, RANGES, WATER HEATERS, FLOOR FURNACES

There is no better fuel lifter available than the Autopulse Electric. Yet, the price is substantially lower due to simple design and high production facilities.

You can quote a lower price on a fuel lifter job—and lower prices mean more people will buy them. You can make an excellent profit on each job, and make more profits because you can sell more jobs.

Thousands of people need automatic fuel lifters—will buy them if it is *sold* to them at a reasonable price. There is a huge potential market among people who want to get rid of the messy job of carrying oil, filling heater tanks.

The Autopulse is very easy to install—just run the fuel lines and connect the Fuel Lifter to the nearest 115-volt electric supply. That's all there is to it.

After that, it is automatic. The user never has to think about it—it needs no attention. As long as there is fuel in the main tank, Autopulse Electric Fuel Lifter will bring it to the heater.

Write for literature.

AUTOPULSE Corporation

LUDINGTON, MICHIGAN

the product is sold and used under the guarantee; or

"(g) Purported guarantees in the form of documents, promises, representations or other form which are represented or held out to be guarantees when such is not the fact, or when they are service contracts of the type which are not guarantees, or when they involve any deceptive or misleading use of the word 'guarantee' or term of similar import; or

"(h) Guarantes issued, or directly or indirectly caused to be used, by any member of the industry when or under which the guarantor fails or refuses to scrupulously observe his obligations thereunder or fails or refuses to make good on claims coming reasonably within the terms of the guarantee; or

"(i) Guarantees which in themselves or in the manner of their use are otherwise false, misleading, or deceptive.

"(3) This rule shall be applicable not only to guarantees but also to warranties, to purported warranties and guarantees, and to any promise or representation in the nature of or purporting to be a guarantee or warranty.

RULE 10—COERCING PURCHASE OF AN INDUSTRY PRODUCT OR INDUSTRY SERVICE AS A PREREQUISITE TO THE PURCHASE, LEASE, OR LOAN OF ANOTHER INDUSTRY PRODUCT OR INDUSTRY SERVICE.

"The practice of coercing the purchase of one or more industry products or industry services as a prerequisite to the purchase, lease, or loan of one or more other industry products or industry services, when the effect may be substantially to lessen competition or tend to create a monopoly or unreasonably to restrain trade, is an unfair trade practice.

RULE 11—DEFAMATION OF COMPETITORS OR DISPARAGEMENT OF THEIR PRODUCTS OR SERVICES.

"The defamation of competitors by falsely imputing to them dishonorable conduct, inability to perform contracts, questionable credit standing, or by other false representations, or the false disparagement of competitors' products in any respect, or of their business methods, selling prices, values, credit terms, policies, or services, is an unfair trade practice.

RULE 12—AIDING OR ABETTING USE OF UNFAIR TRADE PRACTICES.

"It is an unfair trade practice for any person, firm, or corporation to aid, abet, coerce, or induce another, directly or indirectly, to use or promote the use of any unfair trade practice specified in these rules.

GROUP II

"Compliance with trade practice provisions embraced in Group II rules is considered to be conducive to sound business methods and is to be encouraged and promoted individually or through voluntary cooperation exercised in accordance with existing law. Nonobservance of such rules does not per se constitute violation of law. Where, however, the practice of not complying with any such Group II rules is followed in such manner as to result in unfair methods of competition, or unfair or deceptive acts or practices, corrective proceedings may be instituted by the Commission as in the case of violation of Group I rules.

RULE A—COST RECORDS.

"It is the judgment of the industry that each member should independently keep proper and accurate records for determining his costs.

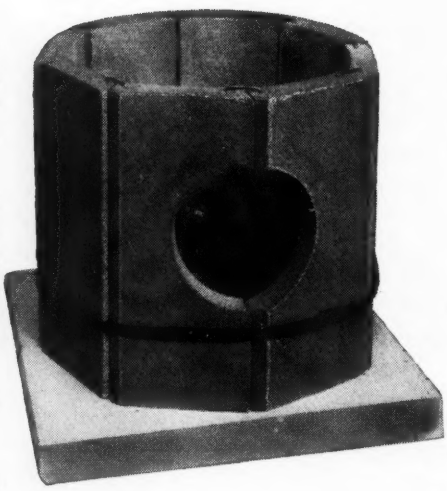
RULE B—RULE COMPLIANCE.

"It is the judgment of the industry that fair dealing and ethical business conduct call for a strict adherence by industry members to the principles of Group I rules in the entire conduct of their affairs, and the industry recommends that each member pledge his voluntary acceptance of these rules."

◈

Walter Sormane announced his resignation as general sales manager, Conco Engineering Works, Mendota, Ill., on June 24. He had been associated with the company since 1944 and is credited with being among the first to make available to his selling organization a complete line of heating equipment for all fuels and systems. Mr. Sormane, who resides at LaSalle, Ill., previously served as sales manager for Schwitzer-Cummins' heating division.

LOWER PRICES FOR R & I "2 in 1" Chamber



Because of new, streamlined packages you can now buy R & I Combustion Chambers at much lower prices.

Chambers are precast of medium-weight, high temperature refractories which have service limits far beyond temperatures encountered in modern oil burners.

Called the "2 in 1" Chamber because:

1. **Quick Heating is produced by thousands of tiny projections inside Chamber which attains glowing radiance the moment the burner switches "on."**
2. **Medium Heat Storage—R & I Combustion Chamber gradually gives up stored heat after the flame shuts "off," providing efficient, smoke-free fire box.**

Your supply house has R & I Combustion Chambers. Write us for new informative booklet OB-100 which gives valuable information for dealers and installers.

REFRACTORY & INSULATION CORP.

116 WALL ST., NEW YORK 5, N. Y.

Chicago 4, Ill., Newark 2, N. J., Philadelphia 2, Pa.

R&I COMBUSTION CHAMBER

SUN-RAY PROVIDES THE HEAT THAT SAVES THE FUEL

Superior Sun-Ray Design Featuring "Shell" Combustion Head Saves up to 30% in Fuel

- **RAISES CO_2**
- **LOWERS STACK TEMPERATURE**
- **NO SMOKE—NO SOOT**
- **NO ODOR—NO NOISE**
- **POSITIVE OIL CUT-OFF**
- **SUPERIOR CONTROL OF AIR AND FLAME**
- **PRECISION-BUILT**

WITH Sun-Ray's reputation of 20 years as one of the world's largest producers of quality burners —

PLUS Sun-Ray's skill in design and precision engineering to meet the highest specifications for burner dependability —

PLUS Sun-Ray's research, in cooperation with Shell Oil Company's combustion engineers, to adapt the famous Shell Combustion Head to the Sun-Ray Burner —

YOU GET the best in oil heating, a new high in combustion efficiency, a new low in fuel consumption.

Sun-Ray Series "S" Burners provide a method of controlled mixing of oil and air and double oil atomization to produce a flame that burns oil (catalytic as well as straight distillate) cleanly, completely with minimum of excess air. Comparison with conventional gun-type burners shows that the Series "S" Burner saves up to 30% in fuel, provides clean heat, requires less service.

FAMOUS THE WORLD OVER FOR QUALITY AND ECONOMY

Inquiries invited from Boiler and Furnace Manufacturers

SUN-RAY FULLY AUTOMATIC OIL BURNERS

SUN-RAY MODELS
6 Sizes—0.75 to 25 gal./hr.

Series "S"—3 Sizes—0.75 to 6 gal./hr.

MARINE MODELS
4 Sizes—0.75 to 25 gal./hr.

SUN-RAY BURNER MANUFACTURING CORP.

Name formerly Independent Oil Burner Corporation

139-22 QUEENS BOULEVARD • JAMAICA 2, N. Y.

Coleman Blend-Air Warm Air System Features 3-½" Ducts

A PACKAGED, pre-engineered heating system, announced recently by Coleman Co., Wichita 1, Kan., employs 3½" ducts. Known as the Coleman Blend-Air, the new system has three basic parts: An air-tight furnace; a system of factory-made supply ducts and a series of blending units wherein heated air from the furnace is mixed with room air.

Heated air from a furnace unit, fired with a vaporizing burner and developing a 55,000 Btu output, is forced at high velocities through the 3½" ducts at temperatures up to 195° and enters the blender unit. Inside, the heated air passes through a nozzle and sucks room air through a grille in the bottom of the blender. This action thoroughly mixes the heated air and the room temperature air and the blend is discharged into the room by means of another grille at the top of the unit.

When it enters the room the blended air has a temperature of 135° and has been slowed down from a velocity of 1,100 to approximately 300 fpm. Each hot air run is estimated to deliver up to 10,000 btu/hr.

The blender unit recirculates air in each room, so that only one short return duct to the furnace is required for normal installations, and air stratification is practically eliminated.

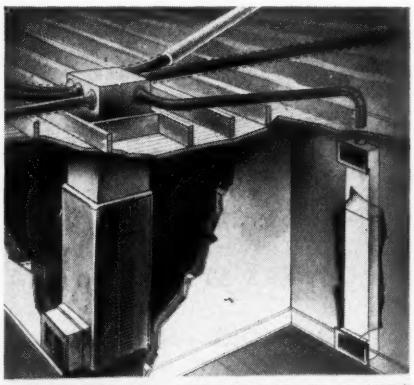
Blender units are available in three styles. One, a telescoping model, which fits between wall studs, is designed for new house construction. When the wall is finished only the two grilles are visible. Compressed, the unit is 48" high and may be extended to 86".

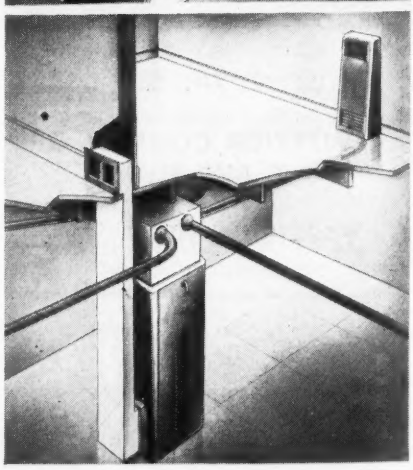
A second blender, 28" high, can be recessed in a wall, and a third, designed for use in existing homes is a 32" high metal cabinet which sets against the wall and requires no wall cutting.

A damper in the air inlet nozzle inside the blender unit permits adjustment of the amount of mixed air entering the room and the entire system is operated with automatic controls.

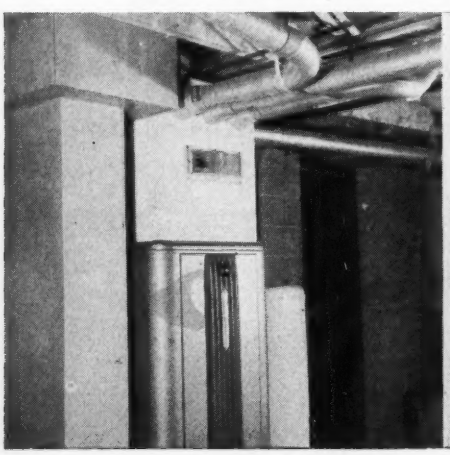
In basementless homes, Blend-Air units may be installed in a closet or utility room. In such cases, the 3½" ducts leave the plenum chamber in the conventional manner and run above the ceiling and down through the wall to the blender units. These are installed upside down so that room air is taken from near the ceiling and the blended air is discharged at the floor level.

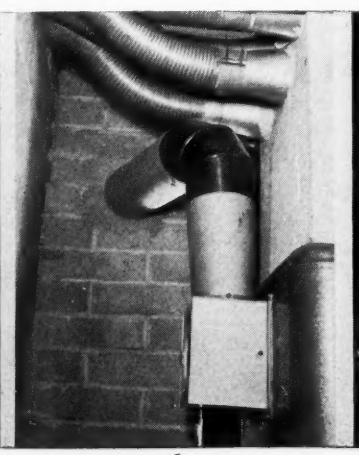
The supply ducts are furnished in convenient lengths and fasten together with clamps. Pre-engineered ells and flexible metal tubing take the runs around corners and obstacles. Return ducts and the furnace plenum chamber are packed in flat cartons. Special take-off fittings facilitate attachment of supply ducts to the plenum chamber.

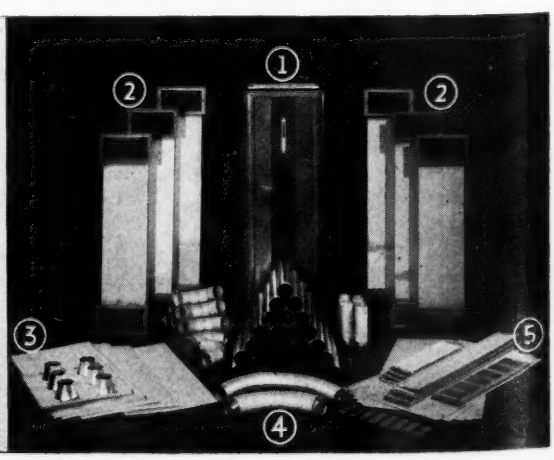




Upper right: *Phantom view of Blend-Air installed in utility room, with supply ducts run through attic. Blender in wall is installed upside down, so that heated air from the furnace enters from above pulling in room air from near the ceiling. Return duct is at lower left.*
Lower right: *Basement installation, with a cabinet-type blender shown against the wall. This blender is designed for old homes and requires no cutting of wall or plaster.*
Below left: *A typical installation showing the Kwik-Sembly return duct.*
Below center: *Four ducts fit snugly into tiny opening between wall, flue and cold air return.*
Below right: *The Blend-Air package. 1. Oilfired Coleman Modumatic furnace, 55,000 Btu output. 2. Telescoping, concealed air blenders with attached grilles. 3. Furnace bonnet assembly with flared supply duct connectors. 4. Standard 3½" duct sections, pyramided in front of furnace, 90° pre-engineered elbows (left), lock-type slip fittings (right) and universal metal flex fittings (center). 5. Kwik-Sembly return duct.*







More Cleaned Air Per Filter

Because—a Wilson Hair Filter cleans without clogging!

Wilson H*air* Filters utilize their *full-filter-depth* to trap and hold *the maximum* dust and dirt. It's the Wilson-Way of multi-directional distribution of hair in the filter that makes this possible. THERE ARE NO LAYERS.

The texture of the hair filter unit is absolutely uniform throughout its entire thickness. The hair itself is crossed and crisscrossed, in and out, up and down, back and forth every which way. With this arrangement, the hair literally invites all dust and dirt to come in, spread around, and be trapped throughout the entire filter interior. That is why—

(a) Wilson H*air* Filters trap and hold more dust.
(b) Dust does not build up on the inlet surface to block free air-flow and shorten filter life.
(c) Wilson H*air* Filters give more cleaned air per filter and longer service at lower replacement expense.

The Wilson-Way of *full-depth-dust-trapping* is only one of the many exclusive features that make a Wilson H*air* Filter the superior air filter.

REMEMBER—Both are HAIR FILTERS

The famous "Edgeseal," the original H*air* Filter with the patented "self-sealing" edge.

The popular "Honeycomb," the new, dressed-up, encased H*air* Filter.

Both do the thorough job of filtering air that only *Natural Hair,* scientifically processed the Wilson-Way, can do.

Save Delay—Save Dollars—Save Doubt
Send for FREE sample with details and prices.

Wilson H*air* Filters are another quality product of Wilson & Co., Inc.—(World famous for outstanding quality in Meat Foods, Sporting Goods, Pharmaceuticals, Hair Products, etc.)

Wilson & Co., Inc. (*Air Filter Division*) 4100 S. Ashland Ave., Chicago, Ill.

MEMBER INDOOR COMFORT

WILSON'S HAIR FILTER

WILSON & CO.

Manufacturers Activities

Carlin Company Formed; Buys U. S. Burner Line

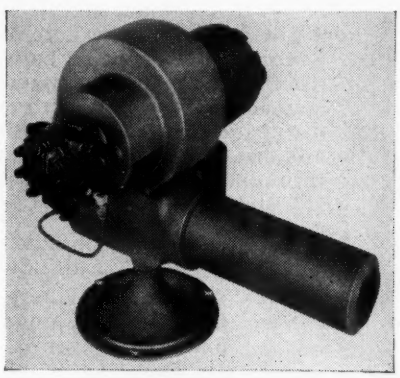
THE CARLIN COMPANY has been formed at Weathersfield, Conn., to manufacture and sell oilheating equipment. The company has acquired the rights to the U. S. line of oilburners, five models of which will be made, as well as a new Carlin conversion burner of conventional high pressure oilburner design.

Lindberg Carlberg

Principals in the firm are Bernard C. Lindberg, president and general manager, and John E. Carlberg, vice president and factory manager. Ben Lindberg, formerly with Silent Glow at Hartford, has represented Ohio motors for the last 16 months. John Carlberg has been associated with the oilheating industry for twenty years, and most recently as chief engineer for Silent Glow.

The new Carlin "400" model is of conventional high pressure design with a range of 1:00 to 4:00 gph. The design features ease of servicing, with particular emphasis on quick and easy removal of the nozzle and electrode assembly. Fan and scroll design also have been improved to get maximum air delivery for the metal used. The coupling splined to the fan hub simplifies assembly.

Five models of the U. S. line will be



Carlin "400"

continued. Models L, W and X have a combined range of 1:00 to 14:00 gph, and are standard high pressure burners. Models LS-2 and LS-3 are equipped with Shell Heads and have capacities of 0.75 to 1.75 and 1.75 to 3.00 gph respectively.

The Carlin and U. S. models all have Underwriters listings and Commercial Standard approval.

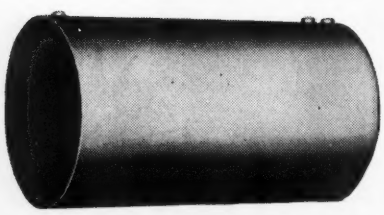
The firm is taking over the manufacturing facilities of the U. S. Burner Corp., at Weathersfield. The plant is equipped with modern equipment for precision manufacturing, much of which was installed during the war years.

Perfex Implements New Distributor Program

CONTINUING its program of franchising distributors, Perfex Corp., Milwaukee, Wis., has announced the appointment of thirteen new distributors for automatic heating controls. V. P. Black, vice president and manager of Perfex Controls Division, discloses the new program was instituted to "provide our

BUTLER FUEL TANKS FOR EVERY PURPOSE

★ Prompt Delivery
★ Highest Quality
★ Long-Life Construction



ELEVATED FARM FUEL TANKS—300 and 500 gallon capacities with sturdy steel frame, skids and barrel rack. Equipped with hose, nozzle, shut-off valve, fill cap and gage.

BASEMENT FUEL OIL TANKS—Easy to handle. Quickly installed. 275 gallon capacity. Welded-on lugs for 1¼" pipe legs. Hard, oven-dried finish.

STORAGE TANKS—For aboveground or underground service station or bulk storage. Butler's conveniently located plants provide a complete line of storage facilities for petroleum products.

Give your customers the finest in safe, quality-built tanks. Always specify Butler. Mail coupon for complete information.

BUTLER MANUFACTURING COMPANY

KANSAS CITY, MO. • GALESBURG, ILL. • RICHMOND, CALIF. • MINNEAPOLIS, MINN.

Address all inquiries to: 7317 E. 13th St., Kansas City 3, Mo.
917N Sixth Ave. S.E., Minneapolis 14, Minn.

Send information on:
☐ Elevated Farm Fuel Tanks
☐ Basement Fuel Oil Tanks
☐ Storage Tanks

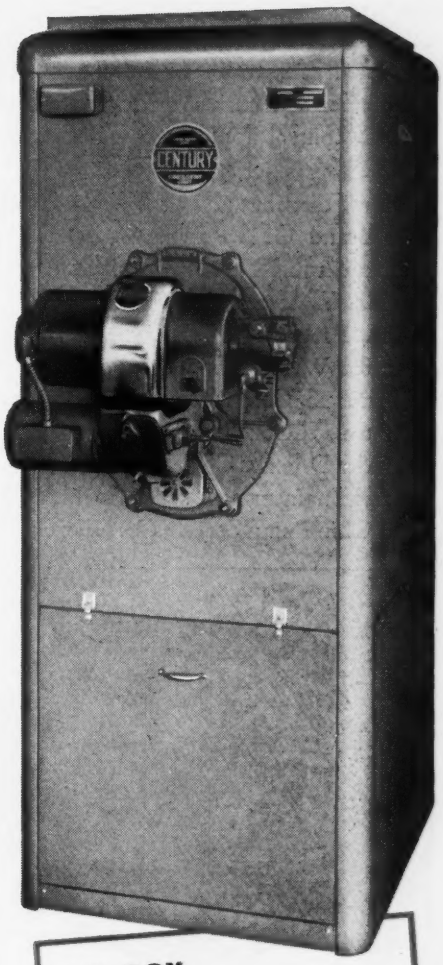
NAME_____
ADDRESS_____
CITY_____ ZONE____ STATE_____

Super Salesmen

. . . . WITH THE PERFORMANCE-APPEAL THAT DELIVERS MORE HEATING SALES FOR YOU

CENTURY

AUTOMATIC OIL FURNACES



WINTER AIR CONDITIONERS

SIX SIZES:
105,000 TO
380,000 B. T. U.'s

LO-BOY FURNACES IN TWO POPULAR SIZES:

85,000 AND 135,000 B. T. U.'s

Yes—you enjoy a definite sales advantage when you offer your customers the *original* and *proven* features of Century Automatic Oil Heat. All Crescent units include the "Cushion-Cradled" Burner which absorbs vibration from all moving parts . . . the famous Crescent Super Heaters . . . plus new Century firing head that delivers high CO^2 and eliminates pulsation. These features add up to minimum fuel consumption! Mail the coupon below for full information about the new Century Lo-Hiboy, the new Century Winter Air Conditioners, the new Century Gas/Oil "Convertible"... and a Century franchise for your community.

NEW "CONVERTIBLE" GAS/OIL WINTER AIR CONDITIONERS

Get more sales with less inventory . . . Sell five ways with just two models. Sell Hi-boy and Lo-boy models with interchangeable gas and oil power vaporizing oil burner . . . or Lo-boy with high pressure gun type burner.

Century
ENGINEERING CORPORATION
CEDAR RAPIDS, IOWA

CENTURY ENGINEERING CORPORATION
Cedar Rapids, Iowa

Rush me information about: ☐ Lo-Hiboy; ☐ Winter Air Conditioners; ☐ "Convertibles"; ☐ Dealer franchise.

Firm Name_____

Address_____

City_____ State_____

Send to Attention of Mr._____

OIL BURNERS • BOILER BURNER UNITS • WARM AIR FURNACES • HUMIDIFIERS • WATER HEATERS • AIR CONDITIONING

manufacturing customers and their dealer organizations with more prompt and efficient local service together with aid in control application and installation."

New distributors in the West are R. M. Brand Co., Tucson, Arizona and Albuquerque, N. M.; Leekley-Hergenrather & Assoc., Los Angeles, Calif.; R. A. Parker Co., San Francisco, Calif. Middle Western appointments include Thermatic Corp., Chicago; Regulator Controls Co., Indianapolis, Ind.; Charles D. Jones Co., Kansas City, Mo.; Prawl Engineering Corp., Omaha, Neb. and Ohio Pump Service Co., Cleveland.

In the East Perfex has appointed Chet Adams Co., Greensboro, N. C.; Harco Distributors, Inc., Baltimore, Md.; Patterson Service Sales Co., New York City; Thermotrol Corp., Philadelphia and C. B. Soper Co., Boston, Mass.

Evans Names Elliott-Lewis As Exclusive Distributor

NAMING of the Elliott-Lewis Corp., Philadelphia, Pa., as exclusive distributor for Evans oilfired home heating units has been announced by R. B. Evans, vice president, Evans Products Co., Plymouth, Mich. He described the appointment as part of a national program of balancing distribution to fit new buying patterns and provide greater service for Evans dealers.

The Elliott-Lewis organization, distributors and retailers of nationally branded appliances and heating equipment in Pennsylvania, Maryland, Delaware, New Jersey and Virginia, will function for Evans in the entire state of Delaware and parts of the other four.

Burnham Boiler Appoints Two Additional Outlets

TWO COMPANIES have been added to the distributor organization of Burnham Corp., Irvington, N. Y. Both will represent and distribute the company's complete line of boilers, radiators and heating accessories.

In Los Angeles, Calif., the A. C. Company, headed by A. C. Patterson has been named to cover the entire state of California, Clark and Washoe counties in Nevada. The Kent Engineering Co., Denver, Colorado, under the direction of Kenneth Stegemiller, will serve the states of Colorado, Wyoming, Montana, Utah, southern Idaho, northern New Mexico and eleven counties in Nebraska.

Isolantite Now Located In Stirling, N. J. Plant

COMPLETING its move from Lyndhurst, N. J., Isolantite Mfg. Corp. now is located in its recently completed new plant in Stirling, N. J. Production capacities have been greatly enlarged and with new modern machinery added to the facilities, Isolantite is prepared to meet growing demand for steatite products and porcelain insulators.

Winkler Sales Meetings Use Time-to-Swing Theme

A SERIES of sales meetings, conducted by U. S. Machine Corp., Lebanon, Ind., makers of the Winkler line of heating equipment, commenced with a factory meeting on April 28 and ended with a meeting in Greensboro, N. C. on July 20. Employing the theme, "Time to Swing," meetings in various cities were attended by dealers from outlying areas. One-day sales skits were presented by personnel from the factory, along with district sales managers. The second of the series was held in Chicago on May

KEEP HOME FIRES BURNING BRIGHTER!

with "NO-SLUDGE" Fuel Oil Treatment

Impaired combustion, congested fuel lines, and a low output of heat, can usually be traced to an accumulation of sludge in the fuel tank. Sludge forms on the premises and is beyond the control of the refiner. Unless proper steps are taken to disintegrate the layer of sludge—and to prevent it from forming, there will be thousands of heat units lost per every gallon of oil used.

"NO-SLUDGE" Fuel Oil Treatment chemically emulsifies any sludge in the tank. Its continued use prevents new sludge formation. "NO-SLUDGE" puts sludge in suspension—makes it burn with the oil. It clears fuel lines, makes oil flow freely—increases the number of B.T.U.'s, prevents breakdowns and holds service-repair work to a minimum.

Servicing the home owner with "NO-SLUDGE" is profitable. One QUART of "NO-SLUDGE" treats 2000 gallons of oil.

Qualified Distributors Wanted
Write to Department F

Dominion CHEMICAL CO., Inc.
WATER CONSULTANTS AND CHEMISTS
FOR INDUSTRIAL AMERICA
11 WEST 42nd ST. · NEW YORK 18, N. Y.

A NEW WARM AIR CONDITIONER

in a complete new line by Gilbarco

THE SENSATIONAL 100,000 BTU UNIT

Here's the first of a *new line* of Gilbarco oil-fired heating equipment. A modern, high-efficiency warm air conditioning unit—trim and compact in design, with rounded corners and two-color "Hammertone" finish for attractive appearance . . . *And the easiest and fastest on the market to install and service!*

THESE IMPORTANT POINTS FOR DEALERS

- ***Lower Installation Costs*—can be installed in far less time than any other comparable warm air conditioner**
- ***Simple to Service*—entire front vestibule instantly removable provides free access to burner on all sides**
- **Burner has all the easy service features of the new Gilbarco GCN model**

DEALERS! DON'T MISS THIS CHANCE:

For new customers and bigger profits write for full information on the *new* Gilbarco Oil-Fired Warm Air Line.

Gilbarco

THE OIL BURNER WITH THE ECONOMY CLUTCH

Gilbert & Barker Mfg. Co.
West Springfield, Mass.
Toronto, Canada

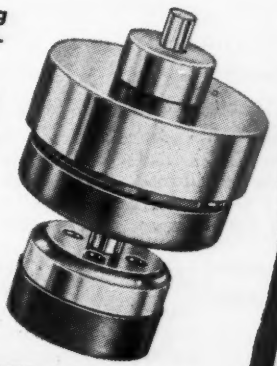
CONVERSION AND REPLACEMENT BURNERS
BOILER BURNER UNITS • WARM AIR CONDITIONERS
INDUSTRIAL BURNERS

Engineered for Fuel-Saving Economy, Trouble-Free Operation

- **Counterflow Air Movement for high, uniform heat transfer**
- **More air-heating surface for greater efficiency**
- **High-quality chrome steel combustion chamber factory-sized and installed**

PLUS

the famous Economy Clutch—an exclusive Gilbarco fuel-saving feature



26, followed by a June 6 meeting in Minneapolis; St. Louis on June 9; Boston, July 12; a meeting for the Philadelphia area, July 15 and the July 20 wind-up at Greensboro.

All meetings began at 9:30 A.M. and ended at 4:30 P.M., with time for intermissions and a noon luncheon. The skits were presented in a carefully planned sequence so that each contributed to the telling of a complete, related sales story.

Maritime Petroleum Leases Offices In New Building

LEASING of the entire 24th floor penthouse of a completely air conditioned office building being erected at 488 Madison Ave., New York, N. Y., has been announced by Maritime Petroleum Corp., New York, N. Y.

H. B. VanCleve, president of Maritime, independent fueloil wholesale marketers, reveals that the new quarters are expected to be occupied early next year and will permit consolidation on a single floor of the company's executive office which now occupy two floors.

Truck *of Operators Heat, Inc., Baltimore, Md., with a panel finished with paint that reflects light at night. The panel is painted with an orange background and black letters. It is the orange, according to J. Hollis Albert, president, that reflects the light and makes the black letters stand out. The view above is a flashlight picture taken at night to illustrate the paint's reflective qualities.*

Kaustine Consumer Booklet Discusses Winter Conditioners

A TWENTY-PAGE BOOKLET, prepared by Kaustine Co., Inc., Perry, N. Y., has been written to assist home owners in selecting a winter air conditioning system. Its foreword explains that it is intended to be neither a technical manual nor an installation manual. For the latter, the booklet suggests that the consumer follow the recommendations of his local heating dealer.

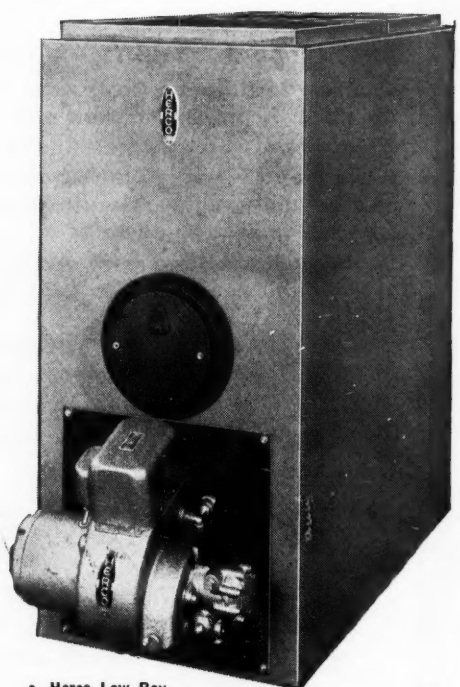
After a brief description of what constitutes a true winter air conditioning sysem and listing the services it must

Sell Better Heat at Less Cost...

SELL HERCO

the Profit-Conscious Oil Heat Unit

Your customers are going to buy the heating unit that will give them lasting performance at the lowest possible cost. Naturally, then, they'll be interested in the new Herco . . . the year's Number One value in warm air heat units. Not only does the Herco Unit cost less . . . it is *top quality throughout.* Its combustion chamber has a double wall of durable stainless steel for dependable heat delivery. The special Economizer saves fuel, because it captures "lost" heat and utilizes it to pre-heat cold, incoming air. If you're wise, you'll sell your customers Herco — for only Herco can give them so much heat . . . from so little oil . . . for so little money. Write for literature.

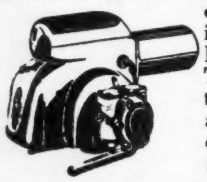


• Herco Low Boy
HLB 65- 65,000 BTU
HLB 85- 85,000 BTU
HLB 110-110,000 BTU

• Also available in High Boy Models . . . 65,000 and 85,000 BTUs

Famous HERCO burner . . . heart of every unit!

Oil-thrifty Herco burners produce a clean, efficient flame that leaves no unburned gases to be converted into soot and fumes. The compact Herco burner is easily detached from the unit and is readily accessible for any servicing. An exclusive Herco feature, the Thrifti-fier, mixes just the right amount of air with the oil so that every drop is converted into *actual heat.*



HERCO STAINLESS STEEL OIL HEAT UNIT

"Built to Last a Lifetime"

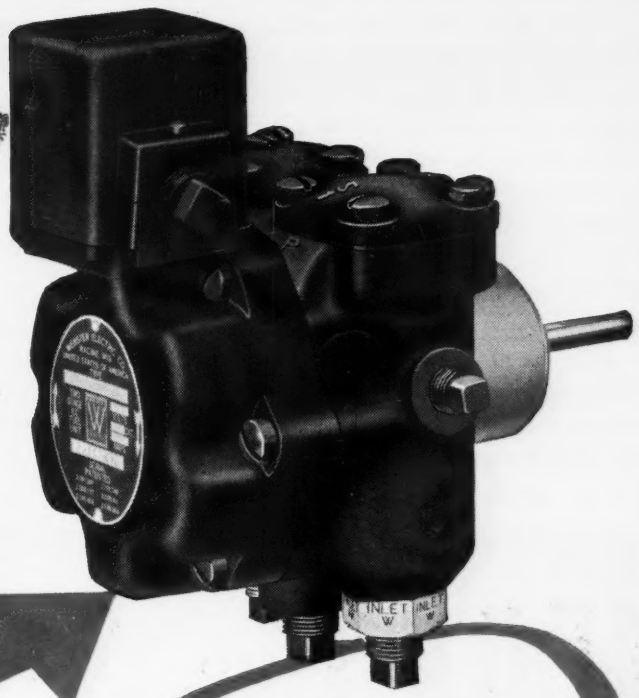
***Manufactured* by Herco Oil Burner Corporation • Lancaster, Pennsylvania**

"There is Always A Market for Greater Value!"

It's Sound Business to Offer Greater Value by installing

WEBSTER ELECTRIC

Top-Quality FUEL UNITS and TRANSFORMERS



HERE ARE THE MAIN FEATURES!

The customer is boss . . . he is the man who chooses your product or competition's . . . he decides what price to pay . . . and one thing he demands is QUALITY.

Dealers agree that price alone is not the deciding factor in making a sale but QUALITY is . . . as consumers demand and buy the products that offer the most and give evidence of long, satisfactory performance.

The complete line of Webster Electric Fuel Units and Transformers offers the opportunity to build dependable quality into your product. The result is product prestige and added sales for you.

The Webster Electric Instantaneous Cut-Off is one example of quality. It has no sliding close-fitting parts—no mechanical seals are involved—there is no need to disconnect any electrical circuits to service valve or strainer. It works instantly—efficiently—and quietly. You get absolute, clean burning—start—running—and stop—no soot—cut-off is instantaneous and complete—it prevents "puff-back" or "flutter" in the combustion area on shut-down.

The Webster Electric Instantaneous Cut-Off Unit is adaptable to present-day equipment and modernization of equipment ten to twelve years old. Read the features shown here, then send your inquiry to Webster Electric for complete information and folder.

In Canada, Webster Electric fuel units are made by Canadian Acme Screw and Gear, Ltd., Toronto, Ontario.

Easy to Install—Entirely standard with Webster Electric mounting and service characteristics. Parts are identical in seal—strainer and valve with well known Webster Electric standard fuel units. Electrical connections can be brought into the mechanism from either side of unit.

No Spilling of Oil—There is no spilling of oil when servicing strainer.

Added Safety Features—In conjunction with the electro magnetic valve, a standard duplex regulating valve operates normally and can operate independently of the electric action.

Simplicity of Design... No engaging or disengaging mechanism of close fitting parts that might stick.

No High Pressure... No high pressure sealing is required, magnetic valve operates in by-pass chamber.

For Either Single or Two Stage Unit ... Furnished for either type.

Design... This new Webster Electric Instantaneous Cut-Off Valve is of the same high standard of perfection as all other Webster Electric products.

WRITE FOR FULL INFORMATION!

WEBSTER ELECTRIC

RACINE WISCONSIN

Established 1909

Export Dept. 13 E. 40th Street, New York (16), N. Y. Cable Address: "ARLAB" New York City

"WHERE QUALITY IS A RESPONSIBILITY AND FAIR DEALING AN OBLIGATION"

perform, other paragraphs explain the difference between gravity and forced air systems and discuss Btu's and what they mean in terms of furnace capacity. Tables show heat loss factors for walls of different construction, approximate gallonage requirements per day at various outside temperatures and savings in per cent gained by lowering night temperatures.

Features of Kaustine oilfired winter air conditioning units are described wherever they contribute to or improve air conditioning functions. Conventional and high boy models, fired with gun type oilburners and low boy types, with both vaporizing and gun type burners, are pictured and discussed in the booklet's concluding pages.

Manufacturer Records Growth Of Stainless Steel Chambers

THE GENERAL ACCEPTANCE of the principle of stainless steel chambers by manufacturers of both boilers and furnaces is pointed up by Stefco Steel Co., Michigan City, Ind., in comparing the combustion facilities used in units displayed at the last three industry shows.

J. G. Gregory, sales manager of Stefco's Heating Equipment Division, discloses that 15% of the boiler-burner units displayed at the 1948 Heating and Ventilating Show held in New York used stainless steel chamber or could furnish them as optional equipment. A year later at Chicago twenty manufacturers had on display a stainless steel chamber in one or more units in their lines. And, more recently at Boston more than 50% of the oilfired units displayed at the OHI Oilburner Show were equipped or could be furnished with stainless steel combustion chambers.

EDCO NO. S-252

THE FILTER

with 98 sq. in. of surface area

Your BEST Filter Buy For PERFORMANCE and PROFITS

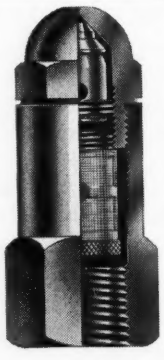
Even microscopic oil impurities are filtered out as oil flows freely thru the 98 square inches of surface area. The specially designed cartridge with the extensive area, gives maximum protection to oil burners, space heaters and water heaters using 1, 2 or 3 fuel oils.

Better Value for Less Money

Because of its extra large surface area EDCO filter lasts longer, gives customers maximum protection and keeps them happy.

And the price is right!

ORDER A SUPPLY TODAY



EDCO NOZZLES
Designed to stay clean longer and TRIPLE-TESTED — for spray angle, atomization and actual rated capacity.

EDCO

EDDINGTON METAL SPECIALTY CO.

P. O. BOX K, EDDINGTON, PA.

Black, Sivalls & Bryson Adds Two Stocking Points

ADDITION of two new stocking points has been announced by Black, Sivalls & Bryson, Inc., Kansas City 6, Mo. One at Snyder, Texas will stock field-welded steel storage tanks and oil and gas separators, the other at Mears, Mich., will handle welded steel storage tanks and treaters.

Krueger Sentry Designates Midwestern Representative

L. J. KRAUSE CO., recently formed Minneapolis organization has been selected by Krueger Sentry Gauge Co., Green Bay, Wis., as representative in Minnesota, North and South Dakota, eastern Iowa and western Wisconsin for its line of tank gauges. The Krause Company is owned and operated by Lin J. Krause, former market supervisor, Register Div., Minneapolis-Honeywell Regulator Co.

Complete Plans For Nu-Way Factory In Vines Lane, England

PLANS have been completed and construction begun on a new factory for Nu-Way Heating Plants Ltd., Birmingham, England, it is announced by William F. Klockau, president, Nu-Way Corp., Rock Island, Ill. The new factory will replace the plant now being used by the English company to build Nu-Way oilburners for distribution in Great Britain and European countries.

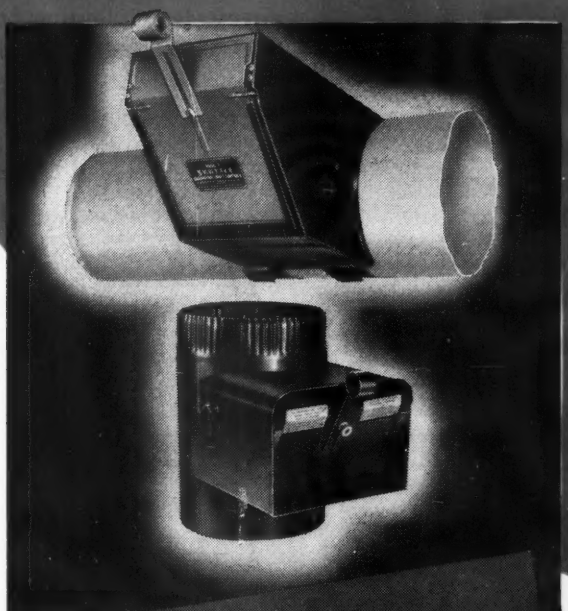
Being constructed at Vines Lane in the borough of Droitwich, England, the site of the factory has a historical background dating to the time of the Roman conquest. Finding of Roman pottery and

Humidity
—a vital ingredient in heating

Skuttle HUMIDIFIERS

SERIES 500
FOR COAL—STOKER OR HAND-FIRED WARM AIR

High plenum temperature in coal-fired plants provides plenty of evaporation from large pan. Plates not necessary where temperatures are above boiling. Skuttle safety type valve assures trouble-free, automatic water feed.



SERIES 600
FOR OIL OR GAS-FIRED FORCED WARM AIR

The answer to the humidity problem where plenum temperature is low. Skuttle Vapoglas Plates are being used by approximately 80% of the heating industry. 56 sq. in. per Vapoglas Plate exposed to heated blower air provides needed evaporation area for humidity. Single size Series 600 holes 5 to 20 plates—for jobs up to 180,000 BTU. Single model fits any bonnet. Self-flushing—self-cleaning.

FUEL ECONOMY— LONG LIFE

Skuttle
WINDMASTER DRAFT CONTROL

Scientifically designed to do a better job of draft control. Test chart shows a flat curve, assuring even, effective control—better operation at all draft values. Square housing and patented angle mounting provide larger effective area—more uniform opening.

Simple, sturdy construction enables you to offer your customer a better regulator for less money—at more profit to you. 5249

Your jobber stocks Humidifiers and Draft Controls.

Skuttle

THE Skuttle MANUFACTURING COMPANY
4090 BEAUFAIT • DETROIT 7, MICH.
WRITE FOR DETAILS

relics there was reported in an article in the November 1948 issue of FUELOIL & OIL HEAT.

The new factory will have four main blocks with ancillary buildings around the perimeter of the site. The major block will be the machine shop, with the furnace construction block the next most important. There also is to be an office block and a canteen and social club, situated so that visitors will not have access to the factory. Plans are for completion so that operations can begin early next year.

Thrush Issues Catalog On Complete Product Line

H. A. THRUSH & CO., Peru, Ind., has prepared and issued catalog form CC-549, devoted to the complete story of the forced circulating Thrush Flow Control system of hot water heat. Copies are available from the company on request.

The booklet makes use of many illustrations and tables and performance charts, each relating to a particular item of equipment. The front page of the condensed catalog contains a schematic view of an installation incorporating the component parts of a Thrush system, followed by pages which picture and describe each item individually.

"NEWTYPE"

a Good Hose on All Counts!

Easier to Carry Out

Off the reel and all the way to customer's connection . . . over steps or terraces; around corners . . . with progress unhindered by kinking or snagging.

Full, Fast Flow . . . Right Up To Nozzle

Unobstructed flow, even through reeled portion, at maximum capacity of rated I.D. of hose . . . the result of non-flattening construction and non-swelling tube.

Easier to Reel Up

Light weight, extreme flexibility and non-flattening feature make a quick, easy job of getting the hose back on the reel again.

TOUGH BROWN COVER

Highly resistant to abrasive wear. Provides lasting protection to hose carcass. Cuts hose replacement costs.

For Low-Cost Fuel Oil Deliveries

Contact Our Nearest Branch

GOODALL RUBBER COMPANY

GENERAL OFFICES, MILLS and EXPORT DIVISION, TRENTON, N. J.

Branches: Philadelphia • New York • Boston • Pittsburgh • Chicago • St. Paul • Los Angeles
San Francisco • Seattle • Salt Lake City • Denver • Houston • Distributors in Other Principal Cities

Est. 1870

Coleman Names Sales Engineers; Dealers Push for Pre-Season Sales

A CORPS of sales and service specialists, organized by Coleman Co., Inc., Wichita, Kan., will work with distributor personnel in the development of better sales and service training programs for dealers. Called sales engineers, each of five new appointees to the corps has been assigned as first assistant to a Coleman regional sales manager. The men are Tom Loberg, J. R. McDowell, Hascel Simmons, V. D. Call and L. T. Ash, all experienced Coleman men.

The company is urging all dealers to participate in two pre-season promotions, designed to increase sales and profits and keep installation crews busy during the months of July and August. The campaigns will consist of dealers offering a 15% discount on Coleman floor furnaces and giving a wool blanket, retail value $15.95, free with each purchase of a Coleman space heater selling at $79.95 or more.

Lustrom Homes Offer Gas Or Oilheating Systems

PURCHASERS of Lustrom homes are given their choice of gas or oilfired furnaces and gas or electric water heaters, permitting them to take advantage of the lowest local fuel and utility rates, according to Carl G. Strandlund, president, Lustrom Corp., Columbus, Ohio.

Furnaces of either type installed in the porcelain enamel steel homes are the same size and are attached to the ceiling of the utility room, providing ceiling radiant heat. Both the gas and oilburners are the same size and a changeover from one to the other can be made quickly. Electric water heaters have 52 gallon tanks; gas heaters are furnished with 30 gallon tanks.

Miami Supply House To Be Sid Harvey Outlet

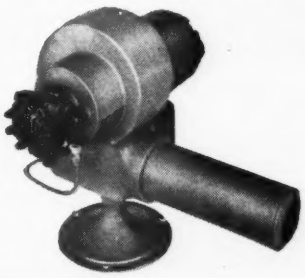
FORMATION of Heating Utilities Corp., Miami, Fla., has been announced by Joseph J. Hershey, J. J. Hershey, Inc., Rockville Centre, N. Y. The firm will begin operations on August 1 and has

Carlin OIL BURNERS enters oil burner field

US OIL BURNERS

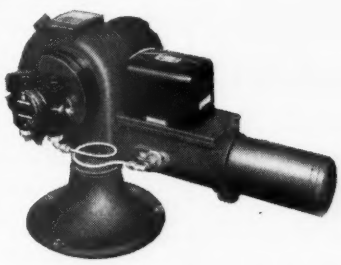
MODEL 400

A completely new oil burner, designed and priced to meet the requirements of today's average home market. Underwriter's listing and Commercial Standards approval. 1-4 g.p.h.



MODEL L

Combines proven features of dependability for small and medium size homes. 1-5 g.p.h. With shell head 0.75-3.00.

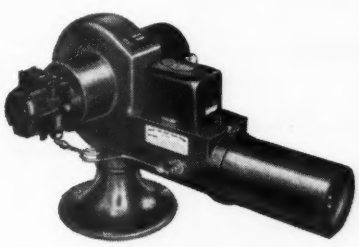


MODEL W

Designed for larger homes or light commercial installations. 4-8 g.p.h.

MODEL X

A heavy duty burner for apartment houses, institutions, office buildings, etc. 7-14 g.p.h.



FOR NEW OPPORTUNITIES

Team up with CARLIN!

THE CARLIN COMPANY enters the oil burner industry with a firm belief that tremendous opportunities are at hand for both manufacturer and dealers who are willing to face the present-day market squarely and break away from hackneyed tradition. While Carlin is new — the men behind it (B. C. Lindberg and J. E. Carlberg) are veterans in designing, manufacturing and selling oil heating equipment.

CARLIN TAKES OVER U. S. BURNERS

Effective July 18th, Carlin took over the plant, manufacture and sales of the famous U. S. Burners. In doing so, Carlin pledged itself not only to maintain the quality and good name of the fine and trusted U. S. Burners, but to improve them in every possible way.

Carlin intends to make what you and your customers want. The completely new Carlin Oil Burner and its companion, U. S. Burners, will be built to highest standards — and priced to fit present-day pocketbooks with generous profits for dealers large and small.

If you believe, with Carlin, that the right combination of manufacturer, dealer and product results in *good business* for all, you will not be wasting your time by hearing the whole story of what Carlin is prepared to offer *YOU.*

Write, phone (Hartford 9-5983) or mail coupon today!

THE CARLIN COMPANY OH-1
P. O. Box 32, Wethersfield, Connecticut

We're interested. Get in touch right away with —

NAME.....

COMPANY.....

STREET.....

CITY.....ZONE.....STATE.....

Fuel Oil & Heat

been appointed a distributor for Sid Harvey, Inc., Valley Stream, N. Y. A full line of Harvey replacement parts will be carried in stock.

Mr. Hershey, a veteran with twenty-six years experience in the heating and oilburner field, recognized the need for a central source of supply for maintenance of automatic heating systems during a vacation he spent in Florida. Active with him in the management of the concern will be Paul Stoll, for twenty years factory representative for Pacific boilers, Airtemp and Century oilburners, and Donald Hershey, his son, who has had four years experience with Minneapolis-Honeywell and the Hershey organization.

Shell Opens Terminal To Serve Milwaukee Area

A MARINE TERMINAL, largest and most modern facility the company has built since the war, was opened in Milwaukee, Wis., June 6 by H. S. M. Burns, president, Shell Oil Co., New York 20, N. Y. Occupying a ten acre site, the plant has storage tanks holding ten and a quarter million gallons of petroleum product for distribution in the Milwaukee area. The terminal will handle about twenty separate products, with gasoline, fueloil and kerosene constituting the greater bulk, about forty-two million gallons of these being expected to pass through the terminal each year.

All units in the plant are placed to cut movement of personnel and products to a minimum and provide, at the same time, for future expansion. Most products to be handled are made in Shell's Wood River, Ill., refinery, from which they move to East Chicago, Ind., through the company's products pipe line and then by lake tanker to Milwaukee. Other products come in by rail. Terminal tanks have been designed large enough to hold sufficient products to supply normal needs during the season when Lake Michigan is closed to shipping by ice. If the ice season should be unusually long, or demands high, additional products could be brought in by rail.

Launch Advertising for Siegler Space Heaters

AN EXTENSIVE national advertising campaign, beginning in July, has been announced by Siegler Enamel Range Co., Centralia, Ill., with heaviest copy emphasis on oilfired space heaters, featuring a "two-in-one-heat-maker" and built-in Siegler-matic draft.

The campaign is scheduled in four national magazines, eleven state farm publications, daily newspapers in 106 markets and telephone directories. A direct mail program is going to the company's dealer organization to stimulate interest and with a cooperative advertising plan, Siegler is offering a set of newspaper mats for local use.

Kohnstamm Advances To Jack & Heintz Presidency

A MEETING of the board of directors, Jack & Heintz Precision Industries, Inc., Cleveland 1, Ohio, on June 24 elected Frank R. Kohnstamm president and chief executive officer; Kenneth G. Donald, formerly president, was named chairman of the board and O. T. Hess, secretary, became vice president.

Mr. Kohnstamm has been senior vice president and joined the company in 1947 after wide experience in the industrial field. Mr. Hess, secretary since

An Unparalleled Achievement In Automatic Oil Heating!

Excerpts from letters from the field offer conclusive evidence that the Commodore is everything claimed for it.

★ "We know, and are reasonably sure you will appreciate knowing, how little service and replacement parts we have had to render to our dealer organization during the ten years we have handled Beckett Commodores."

Mormile Plumbing & Heating, Amsterdam, N. Y.

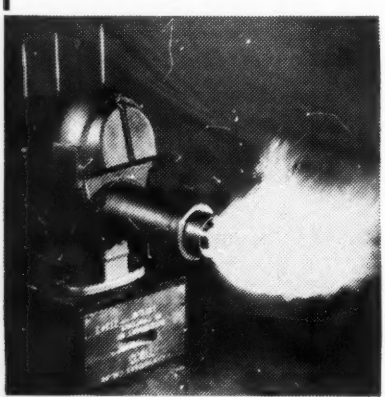
★ "We sold Beckett burners about ten years ago, and the job in our office is still knocking it off perfectly without a single replacement part after eleven years burning 4000 to 4500 gallons of oil per year."

E. E. Souther Iron Company, St. Louis, Mo.

★ "Our experience in the sale of Beckett Commodore burners has been so satisfactory that we thought we might tell you about this and compliment you upon the excellent product. For a period of over 10 years we have had excellent results with your burners and have had no complaints in connection with any that we have sold."

Marsden & Wasserman, Hartford, Conn.

BURNING IN SUSPENSION IN OPEN AIR
1. Without aid of firebox—
2. Ignition cut-off—
3. Normal flame retained.



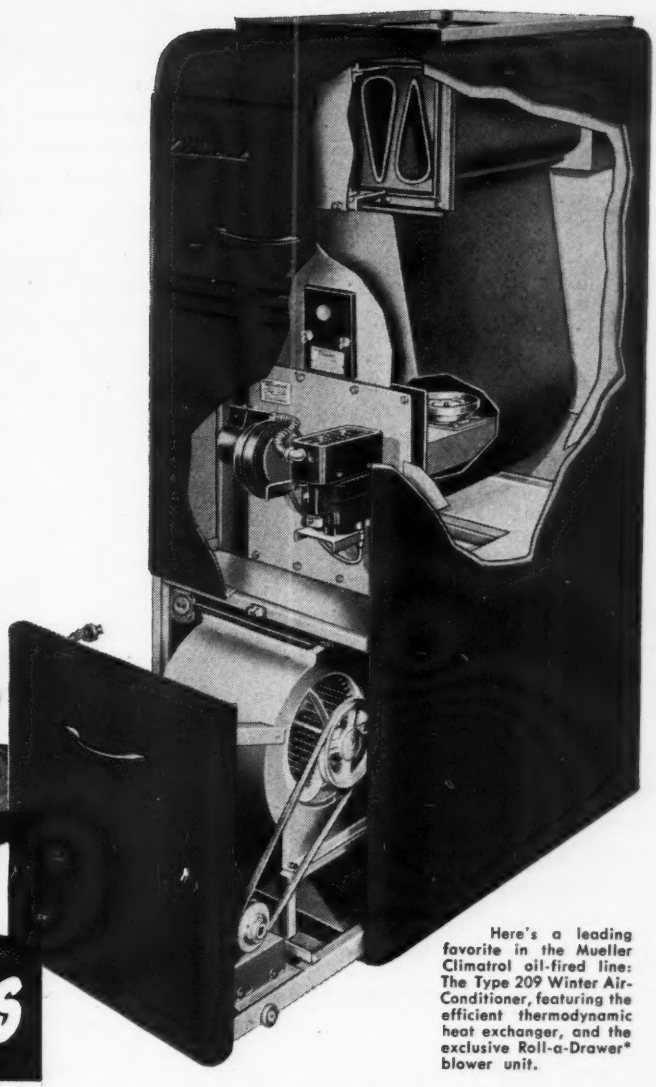
Here the Commodore balances pencils to demonstrate its vibrationless operation . . . its absolute alignment. Worn bearings, noise, leaks in the fuel unit, costly repairs, service charges . . . may result from vibration.

Beckett
COMMODORE
Oil Burners

Sixteen U. S. and Foreign Patents prove COMMODORE principles must be different. Easily burns Catalytic oils at higher efficiencies . . . nozzles remain cool to the touch.
Models ¾ to 13 gallons.

R. W. BECKETT CORP.
Elyria, Ohio

Mueller Climatrol fuel-thrifty Furnaces



Here's a leading favorite in the Mueller Climatrol oil-fired line: The Type 209 Winter Air-Conditioner, featuring the efficient thermodynamic heat exchanger, and the exclusive Roll-a-Drawer* blower unit.

build oil-heat sales to a profitable "high" with features that make them a better buy

A Mueller Climatrol furnace has what it takes to make the sale to your prospects. And that's true in every case — whether the customer buys from first impressions of appearance and design features, or whether he digs deeper to find why a Mueller Climatrol furnace keeps his fuel bills at a minimum for years to come.

Most often, it's Mueller Climatrol fuel-thrifty operation that makes the sale for you. That's why it's important to know how every feature of Mueller Climatrol design is engineered for fuel-saving efficiency — from the handsome cabinet to the scientifically designed exchanger and burner.

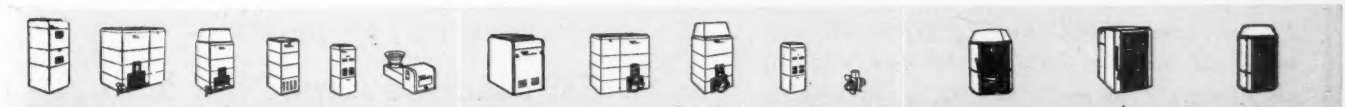
As you tell your prospects about each feature, stress this budget-appeal advantage. That way, you give every oil-fired unit in the complete Mueller Climatrol line a chance to sell itself. And that's the way they build your sales and profits to a new "high."

Write for full details on Mueller Climatrol oil-fired furnaces and winter-air conditioners (including Mueller's modular designs) — the products of 92 years of home-heating experience. *L. J. Mueller Furnace Company, 2009 West Oklahoma Avenue, Milwaukee 7, Wisconsin.*

MUELLER Climatrol

REG. U.S. PAT. OFF.

F-45



FOR GAS | FOR OIL | FOR COAL

1946, had practiced corporation law in New York prior to service with the Navy during the war. Mr. Donald, a vice president of Robert Heller & Associates, business management consultants, had been serving as president on a temporary basis.

American Furnace Purchases H. C. Williams Furnace Division

PURCHASE of the domestic furnace division of H. C. Williams, Inc., Detroit, Mich., together with manufacturing and sales rights to newly-designed interchangeable gas and oil winter air conditioners, has been announced by American Furnace & Foundry Co., Milan, Mich. The new furnaces, to be known as American Eagle models, augment the company's present line of coal, gas and oilfired units.

The Williams machinery, including tools, dies, jigs and fixtures, for the Eagle models, were moved to Milan early in May, along with materials and engineering facilities and construction begun on a high-boy unit, 80,000 Btu capacity and a basement vestibule model, 100,000 Btu rating. Plans call for six additional models ranging up to 200,000 Btu. In addition, Phillip Williams, head of the company bearing his name, and his engineering organization, have been retained to assist in further development of American cast-iron furnaces.

Autocar Book Offers Pictorial Factory Tour

A RICHLY FINISHED book, prepared by The Autocar Co., Ardmore, Pa., and entitled "Tough Tested Trucks," concentrates in pictures and text information which would take a visitor at least a week to obtain for himself on a conducted tour of the plant. Ten thousand copies of the book have been distributed to Autocar's branches and dealers.

Primarily an illustrated description of the research, development and quality control of the heavy-duty trucks and tractors produced at the Ardmore plant, the book also is intended to be instructive to the Autocar salesman and be a means of informing prospects of the high level of Autocar engineering know-how and precision manufacturing. Pictures range from a mammoth truck-shaker, a machine which wrenches a truck to see what it can stand, to shots of a bicycle, built to gauge brake efficiency, and other instruments which measure truck parts by air.

Radiator Specialty Names Two New Representatives

APPOINTMENT of two representatives for its Solder Seal line has been announced by Radiator Specialty Co., Charlotte, N. C. Representing the company's line, which includes a fueloil tank solvent, will be Frank W. Lake in northern and western New York, with headquarters in Buffalo and D. W. Shoemake in northern California, with headquarters in San Francisco.

Magnetrol Changes Distribution Organization

CHANGES in its product distribution organization designed to provide direct factory representation in several important industrial areas have been completed by Magnetrol, Inc., Chicago 23, Ill., manufacturers of liquid level controls. In the New England States, Cochrane Steam Specialty Corp., Bos-

NEW OILHEATING BOOKS •

INSTALLING THE DOMESTIC OILBURNER

This is the first practical guide on oilburner installation. It contains the most significant articles from FUELOIL & OIL HEAT that cover all phases of installation step by step. It is 8½ by 11 inches and contains 64 pages. Illustrated with numerous diagrams, charts and photos.

$1.

LOW PRESSURE BURNERS

Only book other than manufacturers' manuals that gives a full picture of low pressure burner principles of operation and construction—Winkler, Oil-O-Matic, G. E., Hart, Hev-E-Oil. Skeletonized diagram of each make of burner makes them more understandable. The new booklet is 8½ by 11 inches, contains 20 pages.

$1.

OILHEATING SNAGS

This book gives the solutions to many of the Everyday Snags that annoy you in installation and service. We've been working on them for years. They are all simple and practical answers to the most common goat-getters on jobs. It's an 8½ by 11 inch book of 64 pages.

$1.

HEADING OFF TROUBLE IN DOMESTIC OILHEATING

This book contains articles about the most important precautions to take in installations and service and thereby cut down the number of service calls. The selection is about those things which give the greatest amount of future trouble for service men. A highly practical compilation of pieces from FUELOIL & OIL HEAT. It's a 64-page book 8½ by 11 inches.

$1.

Please send check, money order or cash to avoid bookkeeping on the hundreds of small orders we must handle in book sales.

HEATING PUBLISHERS, INC.
232 Madison Ave., New York, 16

Sell Quality to Capture the Buyer's Market

... Sell REXOIL

The OIL BURNER that

DOES MORE

Because of exclusive, patented features that provide clean heat, a hotter flame and the ultimate in economy with any fuel, even catalytics. Features that give you the ammunition to demonstrate and sell in today's buyer's market—against all comers—regardless of any appeal, including price.

DOES IT BETTER

Because it is made by one of the pioneers in the field backed by over a quarter of a century of combustion engineering know-how . . . scientifically designed and quality constructed. What better proof than the fact that no Rexoil has ever worn out?

AT LESS COST

Because it is so constructed that you can save up to 15% on installation costs — no call backs for adjustments — absolutely trouble-free to protect your profits. And its initial cost is little more than the most inferior burner.

BE PREPARED

to offer the BEST. Write NOW for full details concerning REXOIL . . . the Burner that is the answer to today's sales challenge, backed with an aggressive merchandising plan to really grease the skids.

REIF-REXOIL, Inc. 37 CARROLL ST., BUFFALO 3, N. Y.

Pioneer Manufacturers of a Complete Line of Oil Burners, Boilers and Furnaces

ton, Mass., has been appointed exclusive sales representative, while in California the Los Angeles area and southern portion of the state will be served by Berkley Eng. & Eqpt. Co., Los Angeles. The same company will operate also in Arizona and Nevada. In the northern half of California, Johnson Eng. Co., Oakland, has been designated.

All three distributors are to maintain a staff of sales, service and application engineers to consult with engineers, instrument men and users on liquid level control problems.

Homease Cooperating In Boston Television Show

THE COOPERATIVE EFFORTS of Homease Products Div., Paterson, N. J., and Sun Fuel Master Furnaces, Sycamore, Ill., have combined to arrange a television program in Boston. Participating in the preparation and presentation are four metropolitan Boston dealers, Fred Johnson Co., Malden; Furnace Installation Co., Watertown; DuBois Oil Co., Newton and General Air Conditioning & Heating Co., Somerville.

The program, believed to be the first of its kind, commenced on July 26 and will be presented every Tuesday evening for ten weeks. Program time is 10:00 P.M. and the show runs for fifteen minutes.

A. R. Birkins, Homease manager, commented on the show by saying, "We are looking forward to the increased dealer retail prospects due to the presentation, by a personalized showing of manufacturing processes under actual firing conditions with automatic oilburning equipment—right in the owners' homes."

Manual Describes Control Systems for Schools

AUTOMATIC CONTROLS for the modern school are discussed in a new manual published by Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. Written in non-technical language the book covers control systems for school heating, ventilation, water temperature, refrigeration and boiler rooms and incorporates descriptions of fuel savings instruments for maintaining different temperatures in different rooms or zones of a building.

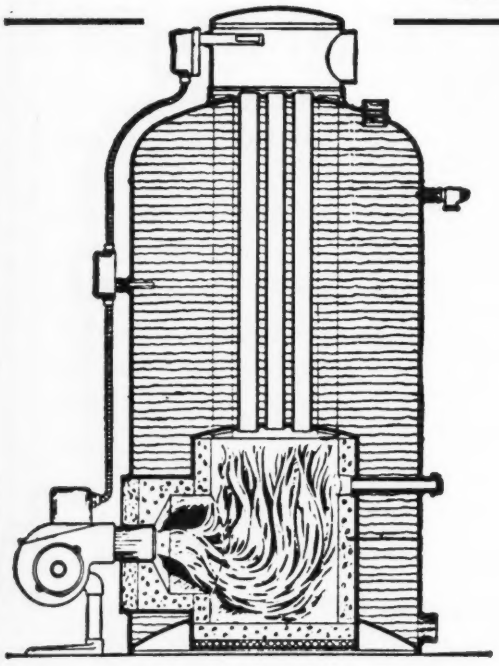
New instruments and controls, developed for specialized needs of school buildings to raise health and comfort standards, are discussed, along with safety controls and similar devices for application on all types of heating systems. Copies may be obtained by writing to the company's merchandising division.

Testing Laboratory Offers Booklets On Its Services

UNITED STATES TESTING CO., Hoboken, N. J., is offering a series of booklets, describing testing facilities available. One 4-page pamphlet tells of efficiency and performance tests for all types of air conditioning equipment, including ratings and performance characteristics for furnaces, boilers, radiators, convectors, oilburners, heat exchangers and insulating materials. Equipment used with these units, such as hot water circulators and air filters, also are tested.

"Testing and Research in Modern Industry" outlines the functions of all branches of the laboratories.

THERE'S AN AQULUX MODEL AND SIZE FOR EVERY HOT WATER NEED!



This is the AQULUX 225-VS Model
Capacity: 270 g.p.h. at 100° Rise
225,000 B.T.U. output, 230 gal. Self Storage

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give you more gallons of Hot Water for every fuel dollar!

You can sell and install Aqulux Water Heaters with confidence that their performance will measure up to expectations. In private homes, factories and great public buildings all over the world, they have been given the acid-test of time under the most varied and difficult conditions.

Few heating units can match their dependability . . . and still fewer can equal their fuel-saving efficiency. If you have a water-heating problem, it will be well worth your time to check up on the superiority of these famous Aqulux Water Heaters. If you will tell us what you need, we will gladly furnish you with helpful detailed information.

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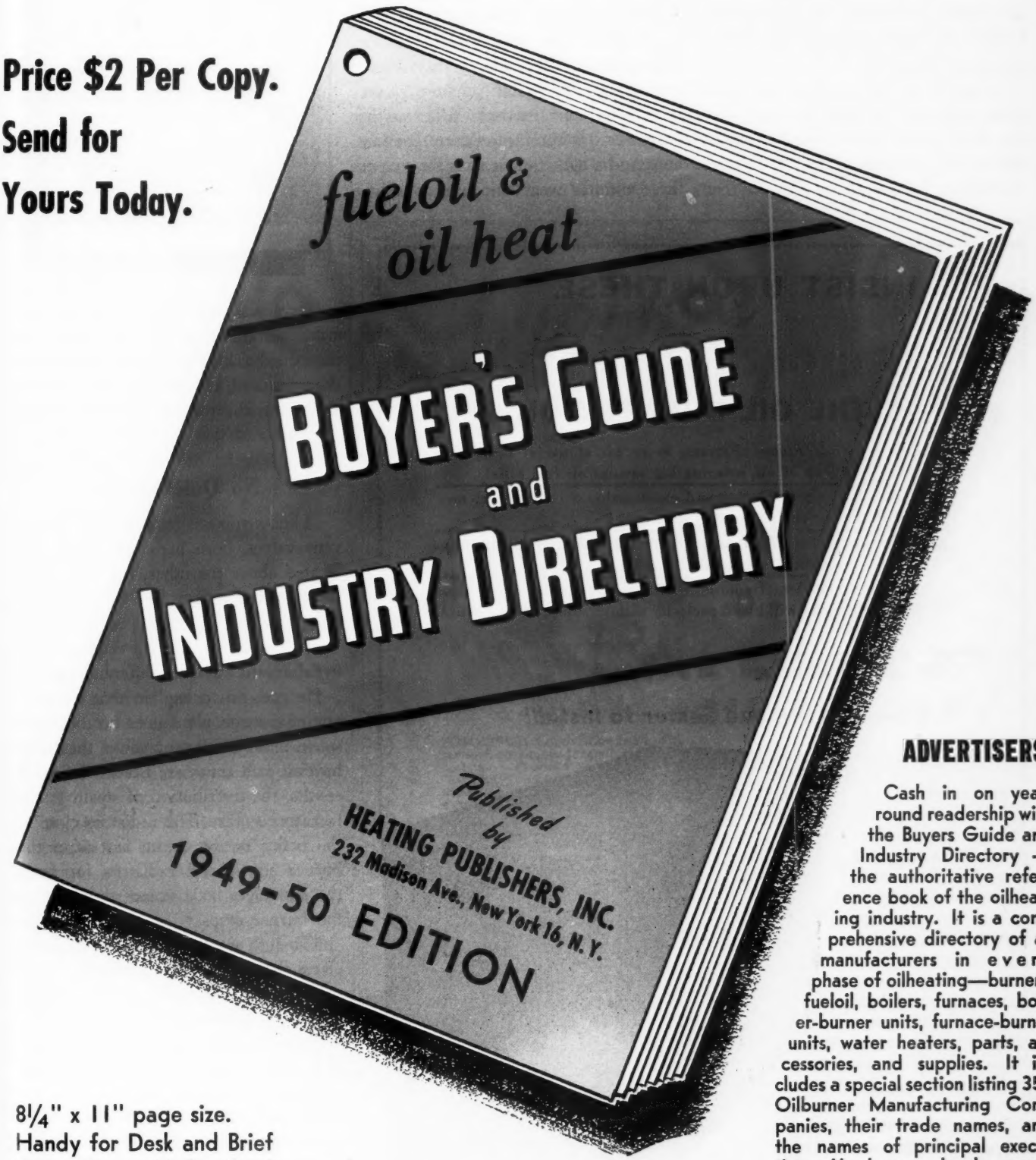

ADVERTISERS!

Cash in on year-round readership with the Buyers Guide and Industry Directory — the authoritative reference book of the oilheating industry. It is a comprehensive directory of all manufacturers in every phase of oilheating—burners, fueloil, boilers, furnaces, boiler-burner units, furnace-burner units, water heaters, parts, accessories, and supplies. It includes a special section listing 350 Oilburner Manufacturing Companies, their trade names, and the names of principal executives. Used every day by manufacturers, jobbers, suppliers, dealers. Final advertising forms close September 1st.

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fueloil & oil heat

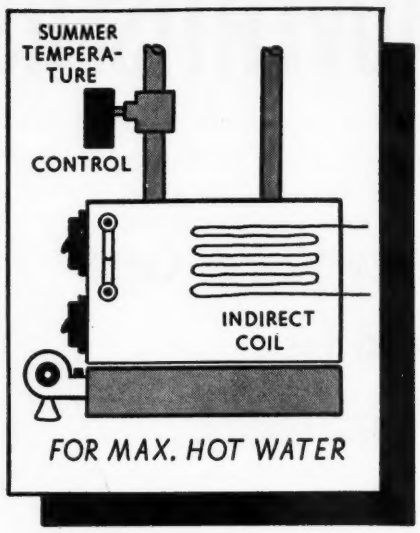
Everyday Snags

More Hot Water

"Is there any way you can give us more hot water right now, before you get around to putting in the new oil-boiler?" the buyer of a new home asked an equipment dealer.

A family of seven had moved into a house formerly occupied by three people and had found out the first week that the larger family needed much more hot water.

To oblige even though he upped the oil consumption considerably, the dealer removed from the boiler the temperature control that had been used to keep the boiler at 190° in summer, and installed instead an immersion type temperature control, located in a tee he found in a steam header. Set at 200° after a few tries at finding the setting that would keep the boiler water simmering, the new control did the trick. Whereas the burner used to run for five minutes every hour and a half, now it runs for two or three minutes every half hour or so.



If you use this idea in a pinch, just make certain that the owner will be reconciled to high oil consumption while the rig is used, and that you don't overdo and cause the radiators to stay hot in summer.

* * *

No Quick-Vents

"I know you recommend two radiator vent valves, both high speed and one located above the other, for a one-pipe steam radiator that has been slow to heat," writes a Chicago service man, "but I've been using two vents per rad in a different way for a different reason."

He goes on to explain that where a one-pipe steam plant does not have the steam main quick-vent valves that most heating men think are needed for good results, the distribution of steam to the radiators suffers. The radiators close to the boiler receive steam first after the burner starts, and radiators far from the boiler get little or no steam before the burner stops.

"To rush steam to each radiator," declares the service man, "I vent at high speed, using a new vent valve installed at the steam-input end of the radiator, every radiator in the system. This new vent valve works at, say, five times the speed of the regular vent valve at the usual place on the radiator. As soon as steam reaches the first section of a radiator the high speed vent snaps shut, leaving working only the regular vent, set for slow venting. If all rads but one heat quickly, then the cold fast vent on that radiator brings steam there in a hurry because all the radiators are venting slowly, at the regular rate, until

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4 important features
IN THE OIL BURNER YOU SELL

★ *The Whirling Flame.* Extracts every bit of useful heat from every last drop of oil, assuring big savings on fuel bills!
★ *Unit Engineering.* Design and construction as an integral unit results in far greater heating efficiency.
★ *"Thermos Bottle" Insulation.* Radiation and heat loss are minimized throughout the non-heating season.
★ *Beautiful Cabinet.* Duotone baked enamel cabinet with chromium hardware will blend perfectly with the other surroundings.

The Bethlehem DYNATHERM
is Easier to Sell and Faster to Install!

MORE PROFIT FOR YOU!

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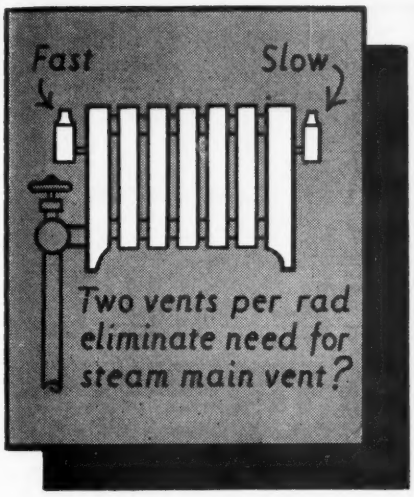


the sick ones gets steam because it's venting faster.

"To cut steam lines size 2" or larger and put in tee's for steam main quick-vents makes a big job that calls for a pipefitter and a helper. You can't tell what you're getting into as far as labor and material costs go. But to drill and tap rads for another vent valve is a cinch. It is a one man job of a few minutes per radiator. In three hours, I've put the extra vent valve on every radiator of a system made up of 13 rads."

* * *

Ends Blower Noise

Talking about complaints about blower noises on forced warm air jobs, an installation and service manager said that last winter he took the bull by the horns and ended the kicks from one fussy home owner.

First, he opened all the balancing dampers in the supply ducts.

Second, after a study of the results he installed another supply register in the living room.

Third, he changed a motor pulley and slowed the circulating blower by about one-third. That really ended the noise.

Sometimes, comments the installation and service manager, we run a blower at awfully high speed because we must have high static pressure in a system with many of the balancing dampers nearly closed. In this house, only the need for another living room supply register had caused us to throttle the dampers of all the other rooms. When in doubt anyhow, give plenty cfm to the main rooms of the house on the first floor, especially the room in which the thermostat is located. Doing that reduces the oil bills.

Trick Radiators

Using an idea explained years ago in FUELOIL & OIL HEAT, a heating contractor has been installing concealed lines for second-floor radiators in one-pipe steam plants by running copper tube lines through the walls. A 3/4" c.t. line gives steam to one end of a radiator, and a 3/8" or 1/2" line, connected to the other end of the radiator, drains the condensate from the radiator. As condensate does not drain back through it in the manner usual for the riser of a one-pipe radiator, the 3/4" c.t. steam riser can provide steam for a radiator as large as about 25 sq. ft. Two vent-valves may be used on the radiator to insure its heating speedily compared to other radiators in the system.

Until recently this heating contractor installed all these radiators in the fashion shown as "A." At the bottom of the "drip line," he used an 18" water seal to prevent steam from blowing up this line into the radiators. He learned recently that this gives trouble if the owner turns off the radiator and the boiler

SWIRLING HEAT

THE BETTER OIL BURNER!

PRINCIPLE. Combustion head, with *vertical* nozzle, is located *inside* the firebox. Pressure air, guided by "Swirlator", mixes with oil vapor to produce highly turbulated mixture and a swirling ball of flame.

CONSTRUCTION. Conventional motor - fan - pump unit supplies air through square draft tube. Oil line and ignition bus bars run inside draft tube. Combustion head cover is instantly removable for access to nozzle and electrodes.

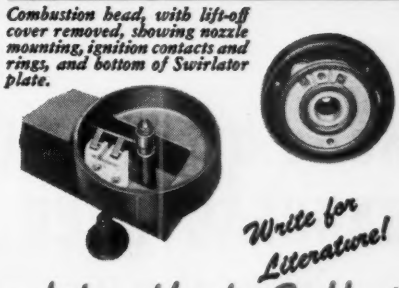
ECONOMY. Laboratory tests and checks on thousands of installations show higher efficiency and substantially lower fuel costs. Performance is achieved through superior combustion and faster, more uniform heat distribution.

FEATURES. No refractory combustion chamber is used, heat being radiated directly by ball of fire. With cooled combustion head, and no intense heat throw-back from red-hot chamber at cut-off, *electrode carbonization and nozzle coking are prevented by eliminating the conditions that cause them.*

MARKET. Live customers are waiting for the superior performance that Swirling Heat can deliver! *We are looking for live, experienced dealers who will welcome a line of better burners.* Let's get together!

- NO COMBUSTION CHAMBER REQUIRED
- NO CARBONIZING ON NOZZLE OR IGNITION POINTS
- HIGHER CO_2 — GREATER EFFICIENCY
- INSTALLATION PROBLEMS GREATLY SIMPLIFIED

Combustion head, with lift-off cover removed, showing nozzle mounting, ignition contacts and rings, and bottom of Swirlator plate.



Write for Literature!

Dealers! Here's quality that Sells!

SWIRLING HEAT CORPORATION, 1775 BROADWAY, NEW YORK 19, NEW YORK

RESEARCH LABORATORIES: 2818 N. WASHINGTON BLVD., ARLINGTON, VIRGINIA

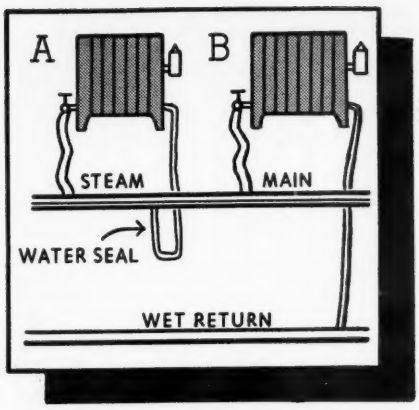
SINCE 1929

develops about two pounds steam pressure. The radiator vent valve, remaining cold, keeps the radiator pressure at zero pounds gauge pressure with the result that the two pounds steam pressure in the steam main tends to blow through the water seal. Turned off, a radiator gives a gurgling sound when there's pressure on the boiler. With high enough pressure, steam feeds up the drip line and tends to heat the radiator and fill it with condensate.

To avoid chances of trouble, on his new jobs this contractor simply connects the "drip line" to a wet return as is shown by "B" in the diagram. With the radiator turned off, even five pounds steam pressure on the boiler simply lifts a bit of water up into the "drip line," so there's no trouble of any kind with only two pounds pressure on the boiler.

"Bear in mind, though, that the water seal method of handling this problem tends to give trouble only where the owner turns off the radiator and the boiler develops real steam pressure," adds the contractor.

After all he used the water seal idea for almost ten years before finding out it can cause trouble.



* * *

Vaporizing Burner

Equipped with electric ignition, this experimental pot-type vaporizing burner worked well all winter, says a development engineer who field-tests such equipment, but in spring failed to light the oil quickly after heat was not needed for two or three days.

Having ascertained there was a snag to the equipment, the engineer's next concern was to keep happy the occupants of the house being heated by the experimental equipment. He accomplished this simply by installing an extra bonnet control on the furnace, setting this at 80°, and wiring it in parallel with the room thermostat. Kept at a minimum temperature of 80° by the new control, the furnace always is warm enough for the electric ignition system to give prompt and positive lighting. It's possible to use a room thermostat instead of a bonnet control to keep a furnace at a minimum of 80°. Cut a hand-hole in a duct above the furnace, and install the thermostat inside a warm air duct.

◈

Howard W. Page, executive assistant to the president of Standard Oil Co. (New Jersey), New York 20, N. Y., has been appointed shareholders' representative for the company's affiliates in the United Kingdom, to take effect in October. At the same time it is announced that *David A. Shepard,* who has been shareholders' representative and chairman of the board of directors, Anglo-American Oil Co., Ltd., will succeed Mr. Page as executive assistant to President Eugene Holman. *R. A. Carder,* of London, will become board chairman of Anglo-American.

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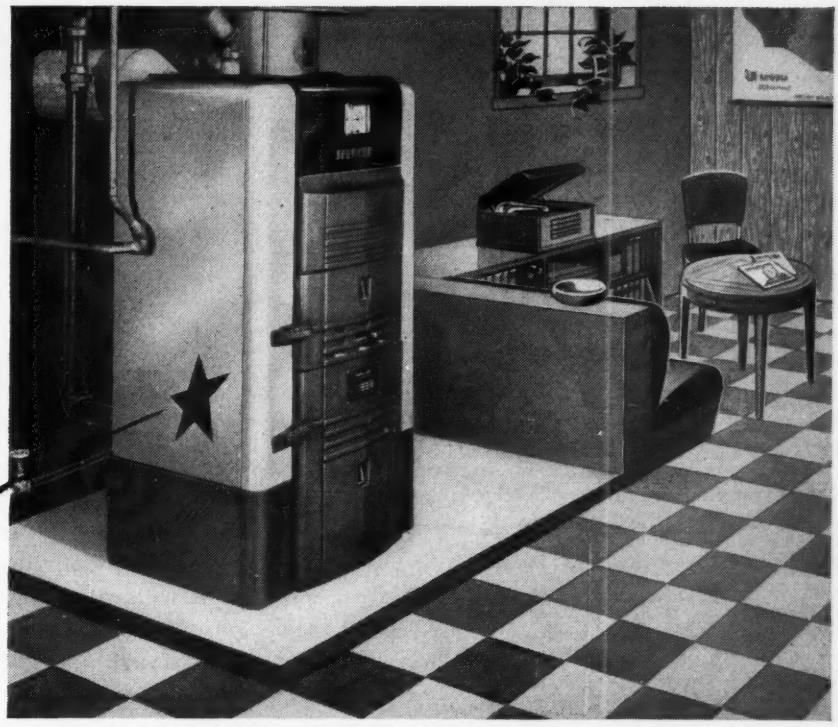
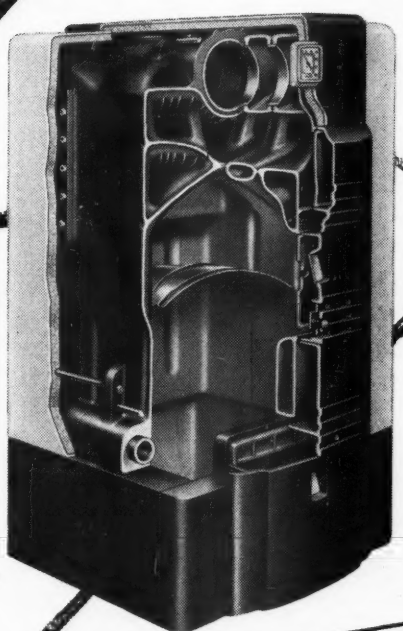
The Spencer "21" All-Purpose Boiler Offers Your Clients—

The easier way to happier living



Spencer "21" Heater and proposed game room in the beautiful new home of the Zeverino family, Valley Stream, Long Island. *Owner and builder:* Mr. V. Zeverino. *Heating Contractor:* Mr. Stephen H. Martin, Rosedale, Long Island.



Designed and constructed in accordance with ASME requirements. Fully approved by Institute of Boiler and Radiator Manufacturers

For the finest in oil heating, you'll get better results when the burner is installed in a Spencer "21" All-Purpose Cast Iron Boiler. It assures clean, effortless operation all year round, at a surprisingly low cost to your clients.

If you're not already familiar with the Spencer "21," drop us a line. We'll be glad to tell you about the features listed below —and many others, too—

- **Available in sizes ranging from 340 to 1000 square feet (steam)**
- **Quickly and easily installed—all section beadings precision-ground to eliminate caulking**
- **Available with built-in instantaneous or tank type service-water coils**
- **Assures efficient combustion with low stack temperature**
- **Easily and quickly adaptable to installation of oil burner unit**
- **With Pyrex glass observation port for better, quicker flame adjustment**

THE SPENCER MARK OF ENGINEERING SKILL

All Spencer Heaters are High Standard Avco Products—

- **Backed by over fifty years of heating experience**
- **Manufactured under ASME and IBR codes**
- **Precision-engineered—to meet rated specifications**
- **Individually tested and inspected**
- **Installed only by the heating trade**
- **Clean—Quiet—Economical—Effortless—Safe**

SPENCER HEATER

LYCOMING-SPENCER DIVISION

WILLIAMSPORT AVCO PENNSYLVANIA

THERE IS A SPENCER for *every* building . . . for *every* fuel

COMMERCIAL SERIES:

"A" (steel)—for industry, schools, apartments

"L-2," "L-3" (cast iron, magazine feed)—for large homes, churches, apartments

RESIDENTIAL SERIES:

"C" and "R" (steel)—for homes and small buildings

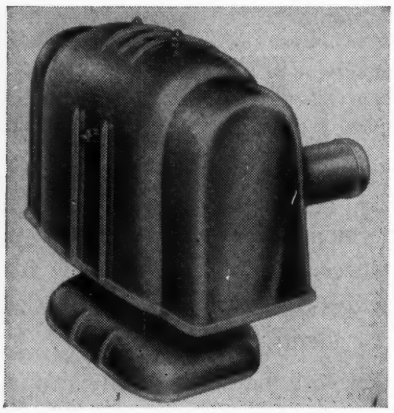
"F" (cast iron, magazine feed)—for small homes

fueloil & oil heat

New Products

Gilbert & Barker Model GCN Burner Features Aluminum Hood

A NEW GCN MODEL, replacing Gilbarco's model S of the same capacity, has been announced by Gilbert & Barker Mfg. Co., West Springfield, Mass., rated from ¾ to 2¼ gph. A die-cast aluminum

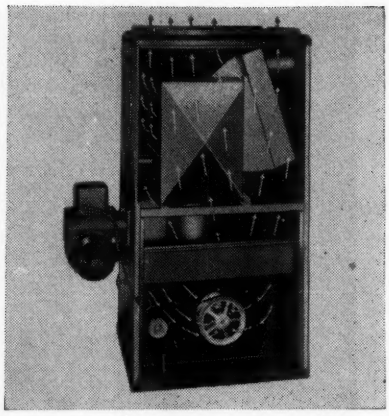


hood, finished in hammertone green enamel, encases the burner, which features also increased accessibility to all working parts and a covered access opening for fan cleaning.

Both the motor and transformer can be removed without disconnecting wiring, the motor by removing two hex head bolts. A covered observation port permits checking of electrode position and nozzle performance while the burner is running, and a micromatic adjustment for the air shutter makes air adjustment possible while the burner is operating. Gilbarco's patented Economy Clutch action, which starts the fan before the oil is delivered to the firebox and allows the fan to continue for several seconds after combustion has ceased, also is featured as standard equipment.

Large Heat Exchangers Feature Auburn Units

THREE MODELS of winter air conditioners, announced by Auburn Burner Co.,

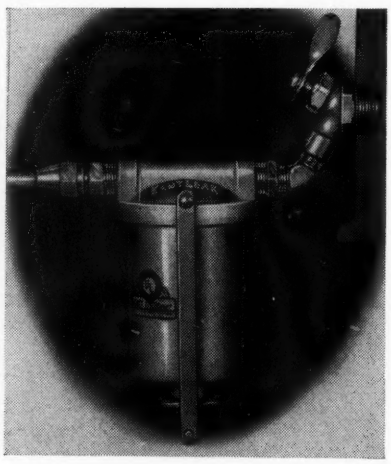


Auburn, Ind., feature a specially designed heat exchanger on which patents are pending. Boiler tubes and large baffled radiation force a long flue travel and provide a large amount of radiating surface. The cold air return is passed over the flue pipe and radiator, through filters and through oversize blower with angle discharge. This forces a steady volume of air directly over the hot surfaces and forces a portion of the air through the boiler flues, around the heat exchanger, combustion chamber and radiator.

Model R-100 is rated at 100,000 Btu, model R-130, 130,000 Btu and model H-85, 85,000 Btu at the bonnet. The latter model is a high boy, designed for small home heating, where it can be installed either in a basement or utility room. Pressure atomizing burners are used in oilfired models, with capacities of 1.00, 1.25 and .85 gph, respectively. All units are shipped complete with burner, blower, humidifier, filters, finished in two tone baked grey enamel.

Anderson Brass Adds Kantleak Tank Kits

ADDITION to its Kantleak line of products of sixteen different oil tank kits has been announced by Anderson Brass Co., De-

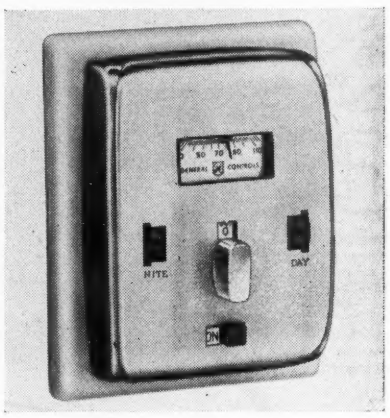


troit 8, Mich. Each kit is packaged for efficient handling and contains all parts necessary for a complete installation. Included are double packed shut-off valves for installation direct to tanks without using adapters, an oil filter and fittings for connecting to the oil feed line. Kits are available for single and double tank installations for space heaters, ranges, hot water heaters, small oil-burning units, central heating plants and large oilfired systems.

Model OF-L oil filters are included in the kits for space heater and similar installations, model OF-N filters for the central heating systems. Filter elements used have controlled and graded porosity, made of a bonded synthetic material under a process that prevents the nozzle screens from becoming clogged with lint or fiber material. The filters have been approved by Underwriters' Laboratories and are available in a wide range of sizes.

General Controls T-70 Is Day-Night Thermostat

THE T-70 TIMER-THERMOSTAT, announced by General Controls Co., Glendale, Calif., provides remote con-



trol of both day and night temperature periods, and can be used with any type of heating unit equipped with automatic control systems. It employs a stainless metal cover mounted on an ivory plastic base, and extends only 1½" from the wall. The T-70 may be furnished as a single unit or within a packaged set of automatic controls.

The unit is a two-wire, bi-metal type thermostat, with snap-action contacts. It is sensitive to radiant or convected heat since the metal cover is an integral part of the temperature element and may be set at any temperature between 50

DOWN GO
RADIANT HEAT COSTS

TACO'S NEW HORIZONTAL CIRCULATOR

*1" — 1¼" — 1½"

WRITE FOR NEW ONE PIPE DESIGN TABLE

CUTS INVENTORIES
(Has interchangeable flanges)

CUTS TOTAL JOB COSTS
(Uses smaller pipe sizes)

Install Taco's new money saver HORIZONTAL circulator on your next job. It has the extra capacity needed for today's modern radiant heating systems. The interchangeability of flanges enables you to cut your inventory and yet have all sizes in stock. HORIZONTAL has same quality features as Taco's Hy-Duty circulator.

*¾" flanges can be supplied instead of 1"

Better Heating—Better with Taco

TACO-ABBOTT SYSTEM Taco

TACO HEATERS, INCORPORATED
137 South St., Providence 3, R. I.

fuel oil & oil heat

WHY STOCK FOUR PUMPS WHEN ONE TUTHILL PUMPRITE FUELSTAT

Meets all 4 Needs

WITH THIS TUTHILL FUELSTAT YOU CAN

. . . REVERSE SHAFT ROTATION IN THE FIELD

. . . REVERSE NOZZLE PORT IN THE FIELD

MEET EVERY REQUIREMENT

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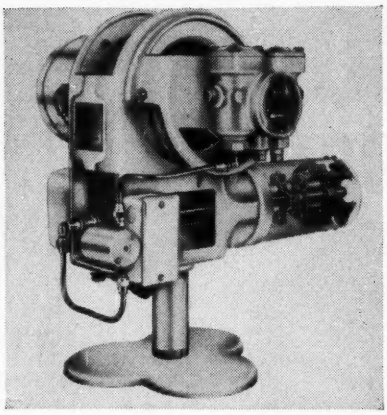
and 90 degrees for the night period, up to a maximum of 13½ hrs. The clock mechanism automatically returns the system to the preselected day temperature each morning, but the daytime setting may be resumed at any time by turning the timer to zero. One model available provides external day and night settings, another has an external day setting and an internally adjustable night setting.

Shell Combustion Head Used In Sun-Ray's Model S-2

ADDITION of model S-2 to the company's series "S" gun type oilburners has been anounced by Sun-Ray Burner Mfg. Corp., Jamaica 2, N. Y. It features the Shell developed combustion head and is rated from 3 to 6 gph. Series "S" burners provide a method of controlled mixing of oil and air and double atomization that burns cleanly, with catalytic as well as straight run distillates, according to the manufacturer.

The burners incorporate regular Sun-Ray features, including one piece blower housing, solenoid valve for instantaneous oil cut-off, and an adjustment knob



to regulate efficiency from the back of the burner without any dismantling.

B & K Tank Sticks Of Kiln Dried Hardwood

GAUGE POLES, announced by B & K Plastic Co., Inc., Paterson 3, N. J., are made of kiln dried hardwood, approximately ⅞" square, with all edges rounded slightly. The poles are stamped deeply in ⅛" markings. The numbers are below the surface of the wood and coated with an oil resistant lacquer. One side may be stained black on order and special poles can be made to meet individual requirements. Measuring depth totals 72", above which is space for imprinting company names.

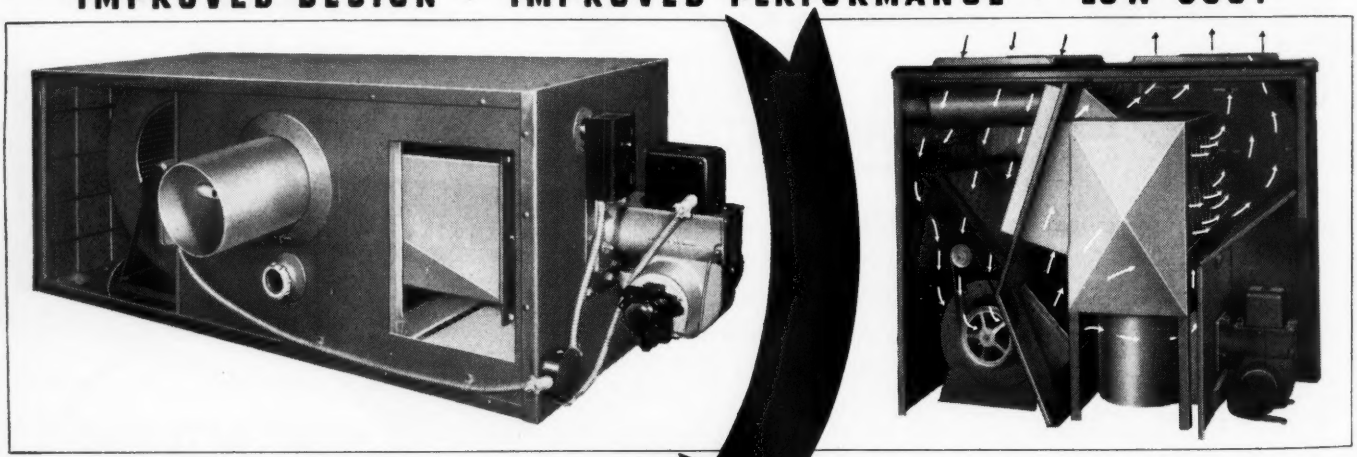
Tokheim Power Pack Pump Is Self-Contained Unit

MODEL NO. 906 power pack unit, made by Tokheim Oil Tank and Pump Co., Fort Wayne 1, Ind., is equipped with a one cylinder, 1½ hp gasoline engine, delivering 20 gpm. Economical to operate the engine will deliver 10,000 gallons of fuel per gallon of gas consumed. Pump, meter and engine of the unit are mounted on a rigid, welded steel frame, completely covered with a metal housing. Weight of the entire unit totals 300 lbs., measuring 40" long, 13⅛" wide and 26½" high.

It is equipped with register, totalizer and ticket printer, an optional item, and features a manual control valve. The valve serves a dual purpose in that it relieves back pressure in the rotary pumping unit when it is turned to the starting position facilitating engine starting. The flow of liquid can be controlled at the valve or at the end of the

AUBURN Is Easiest to Sell!

IMPROVED DESIGN • IMPROVED PERFORMANCE • LOW COST



NEW SUSPENDED OIL FIRED UNIT HEATERS

- Outstanding economical performance is secured through revolutionary design.
- Longer flue travel and larger area of radiating surface extracts more heat from fuel burned.
- Preheating of cold air (An improved AUBURN feature) greatly improves furnace efficiency.
- Air tube design provides greater heat transfer—materially diminishing heat loss through the chimney.

MORE MONEY FOR YOU

NEW AIR CONDITIONING UNITS

- New lower prices make Auburn Equipment easiest to sell.
- Finest quality construction, beautiful finish, wide range of sizes add to Auburn equipments value. The AUBURN pressure atomizing gun type oil burner is noted for its efficiency—quality and economy.

Protected territory for distributors, manufacturers representatives, jobbers. It pays to handle EASY TO SELL AUBURN EQUIPMENT.

AUBURN BURNER COMPANY, Auburn, Indiana

GET COMPLETE DETAILS TO-DAY

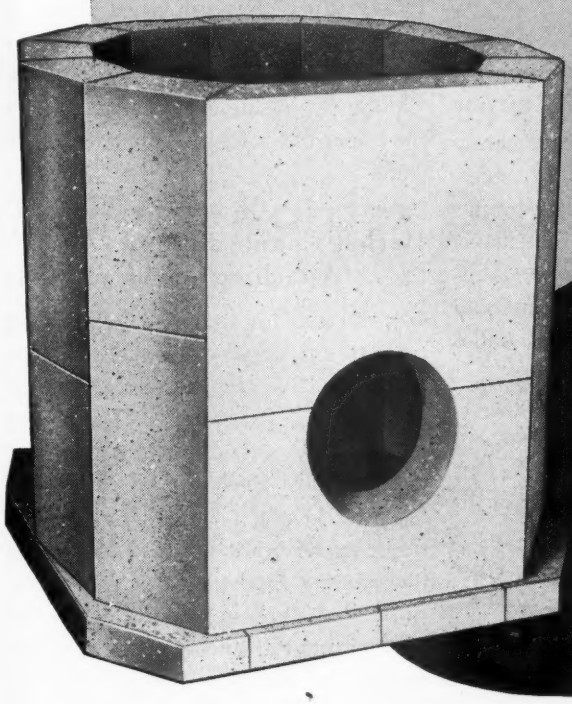
Make More Money... More Satisfied Customers

WITH

Quick, Easy-to-Install

A. P. GREEN

Standard Insulating Firebrick Combustion Chamber



A. P. GREEN BAFFLE BRICK

Offer 4 Advantages — Increase Heating Efficiency

1. All refractory. There is no metal suspension to oxidize or burn.
2. Pre-burned. Will not deteriorate during shut-down months.
3. Flexible in diameter—simply move the legs in the slots to get the desired size.
4. Simple to install. Assemble to the proper diameter and set on top of present chamber.

Feature A. P. Green Baffle Brick —They Are Individually Packaged

It's new! It's easy to install! The A. P. Green Insulating Firebrick Combustion Chamber has been designed to save you installation time and provide your customers with exceptionally fast heating and complete combustion.

The A. P. Green IFB* Combustion Chamber has been engineered to meet the exacting requirements of small gallon-per-hour ranges where there is a short on-off firing cycle. It is available in four standard sizes—1.00, 1.35, 1.50 and 2.00 gallon per hour capacities.

Everything you need for a customer-satisfying installation is included in the easy to handle special carton—even a 5-lb. can of 'SAIRSET high temperature mortar. The front tile is in two pieces with the burner opening already cut.

An A. P. Green distributor located near you will give prompt delivery and personal attention. You'll find him listed in the yellow pages of your telephone directory, or you may write direct for more information.

*Insulating Firebrick

A. P. Green REFRACTORY PRODUCTS

SERVE THE WORLD'S INDUSTRIES

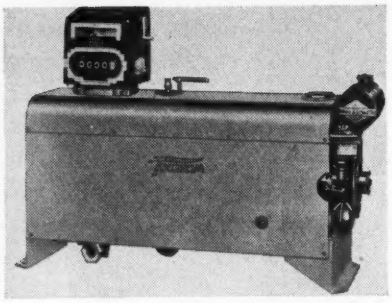
A. P. GREEN FIRE BRICK COMPANY

Mexico, Missouri, U. S. A.

A. P. Green Fire Brick Co., Ltd. in Canada

Distributors in the Principal Cities of the World

-15



hose with the discharge nozzle. Measuring unit of the pump is of the positive piston displacement type, coupled with a self-contained air separator and regulating valve.

Heating Calculator Computes Data for All Heating Systems

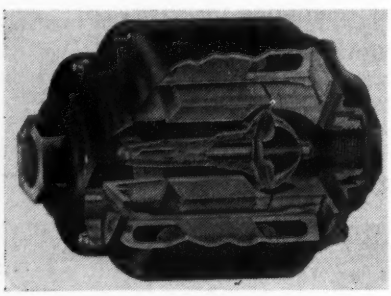
AVAILABLE from Calculators Specialties Co., Chicago, Ill., a slide rule device, the Heating Calculator, computes heat loss and other data. The front of the calculator determines Btu loss per hour and includes scales involving dimensions of space considered, heat leakage factors, air changes per hour, air leakage factors and temperature differences.

The back of the calculator shows Btu loss per hour and direct readings all at one time of equivalent radiation for steam and hot water, leader area requirements for gravity, first, second and third floor, plus percentages for exposure factor and cfm required. Another manipulation computes the required area of duct in sq. ins. and equivalent diameter, based on air velocity and cfm readings.

Hot Water Circulator By Alliance Industries

A CIRCULATING PUMP for hot water heating systems and domestic hot water use has been announced by Alliance Industries, Inc., Huntingdon Valley, Pa. Sizes available are 1" 1¼", 1½" and 2", with all models designed for high-head operation.

The unit is direct pipeline-mounted and may be operated in any position. Construction and design eliminates seals, stuffing boxes and couplings. Its one moving part rotates on a graphite bearing and stainless steel shaft within the fluid being pumped so that lubrication is not required. The circulator also utilizes a stainless steel pumping chamber.



Domestic's Wall Furnace Fired With Breese Burner

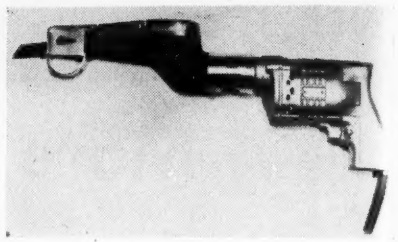
AN OILFIRED WALL FURNACE, recently introduced by Domestic Mfg. Co., Seattle 1, Wash., has a 50,000 Btu output and is fired with a 10" Breese Blue Flame Pilot burner. Its fuel consumption is approximately ½ to 1 cc per minute and even on pilot fire it is operated under forced draft.

The furnace measures 57" high, 30" wide, designed to fit a wall having an overall thickness of 18". Since the unit has been approved by Underwriters for zero clearance between the furnace casing and wooden frame members of the wall, no further insulation is required. Dual cold air intake registers and warm air discharge registers provide circulation of warm air on both sides of the wall. Service is accomplished by removal of a door panel on one side of the unit.

RCS Super Saw Operates From Heavy Duty Drill

OPERATED from a ¼" heavy duty electric drill, Super Saw, announced recently by RCS Tool sales Corp., Joliet, Ill., is gear-driven with steel cut bevel gears and a cam and connecting rod action to produce the reciprocating motion between the drill and the saw carrier which operates the blade. It is ruggedly constructed, but light in weight and can be used without handles or special grips. A patented feature is a blowing device, which acts as a cooling medium for the tool and utilizes waste air for blowing chips and saw dust from in front of the cutting blade.

All parts operate in a bath of non-fluid oil and bearings are high speed ball type. Bearing surfaces which are subject to wear may be removed quickly and replaced easily. Special blades are available for "roughing-in" work, for cutting through nails, through plastered and metal lathed walls, for cutting straight lines, angles or circles in transite.



Heavy duty Swedish steel scrolling blades may be used for cutting circular holes, irregular openings in floor or walls and by using metal cutting blades, the Super-Saw cuts sheet metal up to 10 gauge.

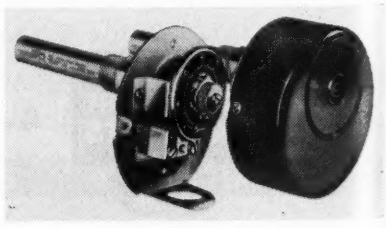
Harbot Connectors For Attaching Armored Cable

CONNECTORS for attaching ⅜" armored cable to knockout boxes in electrical installations have been introduced by Unimatic Corp., Nutley, N. Y. The Harbot Connectors are made of an aluminum die-cast alloy. Each of two parts has a grooved lip which engages the edge and inside surface of a standard ⅞" knockout opening. Operating on a cam-wedge principle it is possible to install the connector from the outside of the box after wiring is completed. Two machine screws position the connector in any desired direction. Other types and sizes will be available.

Immersion Type Control For Hot Water Systems

SPANNING a range from —50° to 400° F., an immersion-type control for hot water heating systems has been announced by Fenwal, Inc., Ashland, Mass. The factory calibrates the switch at 165° F. at the mid-point of the dial. A full turn of the adjusting screw alters the setting approximately 125° F. It is rated 10 amps. at 110 volts, 5 amps. at 220 volts, both AC and 3 amps. at 28 volts and 2 amps. at 110 volts, DC.

A drawn brass shell is the temperature-sensitive element and remains in direct contact with the water in the system. As the temperature rises the shell expands in length and exerts tension on



EXTRA PROFITS FOR OIL DEALERS...

Through Kardex Degree-Day Sales Control

More profit per gallon—and more gallons sold! These are the results you get from Kardex Sales Control with Degree-Day Calculating . . . an amazingly simple system that tells you—at a glance—which of your customers need oil, when, and how much.

NO TANK CHECKING —

Daily temperature reports are all you need to calculate fuel consumption. Tank checking is virtually eliminated. You save time, money. Deliveries of the right quantities at the right time are *automatic*, for Degree-Day scheduling is *automatic*. No guesswork—you are always right!

SYSTEMATIC CUSTOMER FOLLOW-UP —

This system gives you a simple, time-saving, follow-up procedure on seasonal moving peaks, new purchasers, goodwill calls. You know *when* to call and *why* to call. Complaints, misunderstandings, changes, are adjusted economically —customer relations are improved.

YOU CUT DELIVERY COSTS —

You can route your trucks more economically because you know *when* your customers need fuel. No wasted calls. Overtime, night and Sunday deliveries are eliminated, for needs are known in advance, filled according to plan.

SYSTEM TAILORED TO YOUR NEEDS —

There is a Kardex Degree-Day Sales Control system for every type of fuel oil operation. Each installation is tailored to a dealer's particular needs. For example, such items as credit authorization, ledger and collection data may be incorporated in a single system, and a prospect record also included if desired.

ASK TO SEE ACTUAL CASE-HISTORY PROOF

This system is paying off for other dealers . . . why not for you? To show you how it works in actual practice, for dealers with problems just like yours, we've prepared a series of case histories, naming names and quoting figures. A representative from the Remington Rand office nearest you will be glad to show you this study at your convenience. Phone today or write to Systems Division, 315 Fourth Ave., New York 10, N. Y.

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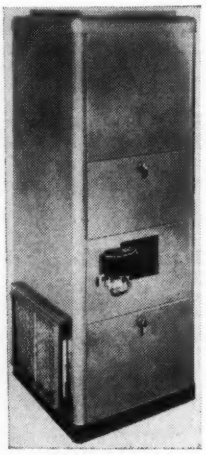
Remington Rand THE FIRST NAME IN BUSINESS SYSTEMS

fuel oil & oil heat

the ends of two curved struts, pulling the insulated silver contact points apart. When the temperature drops, the shell contracts in length and the contact points return to their calibrated position.

Timken Unitized Hi-Furnaces For Small Home Installation

UNITIZED HI-FURNACES, announced by Timken Silent Automatic Div., Timken-Detroit Axle Co., Detroit 32, Mich., incorporate a wall-flame oilburner, blower, air filters, with humidifier optional, in a single compact cabinet. Designed specifically for small home installation, two sizes are rated at 60,000 and 80,000 Btu at the plenum. Overall height for both sizes is 66" and both are 26" square. Shipped assembled and wired, Hi-Furnaces are received ready for connection to service lines.

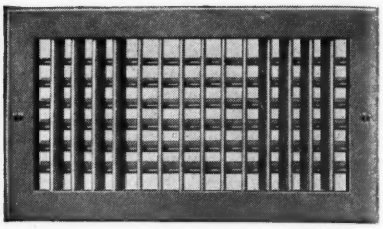


The units operate at low oil rates, with their compactness advanced as making them particularly attractive for small home use where economy in space utilization is most desired. Hi-Furnaces are part of Timken's Duty-Designed line, which includes Hi- and Lo-Boilers, coil and tank type water heaters and standard oil furnaces.

Auer Announces New Models Of Streamliner Registers, Grilles

NEW MODELS of Streamliner registers and grilles for air conditioning and ventilating work have been announced by Auer Register Co., Cleveland 14, Ohio. These models are designed for high quality jobs and include types with single bank of adjustable bars, either vertical or horizontal, and double bank with front vertical and rear horizontal, or the reverse. All types can be furnished with the addition of multi-louvre valves in back.

The registers and grilles feature what is described as an improved style of streamline bars, which are hollow moulded, beveled on the edges to create



minimum resistance to the air flow. Bars are pivoted also on special expansion inserts to keep bars tight, yet easily adjustable. Shutters of multi-louvre valves are pivoted on rivets to prevent vibration on high velocity outlets.

Aldrich Bantam Boiler Unit Developed for Small Homes

DEVELOPED and priced for use in the 4 or 5 room home, a Bantam oilfired boiler-burner announced by Aldrich Co., Wyoming, Ill., stands 45" high and occupies 20" by 33" of floor space. It can be adapted to steam, hot water or radiant heating systems, or furnished in models for hot water supply only. The main shell of the welded steel boiler is lined with a 2" thick blanket insulation. Removal of the smoke pipe connection at the top of the boiler provides access to

NOW! Make Slow Fills . . . FAST FILLS

WITH FASFILL . . . the quick fill pipe connection! Just a turn of the wrist and FASFILL is in place. Make it up hand tight only. Build-ups are unnecessary . . . worn fill pipe threads make no difference. With FASFILL you have *any* needed connection in a jiffy! Long-wearing gaskets at all bearing points prevent oil seepage. FASFILL eliminates blowbacks and fill drip . . .

Shove The Gun Home and Let 'er Go!

There's a synthetic rubber diaphragm in the FASFILL head—just shove the gun through this diaphragm and forget about blowbacks. FASFILL is designed to hold the gun in correct position. Save time, save money . . . with FASFILL!

$13.50 F.O.B. FACTORY

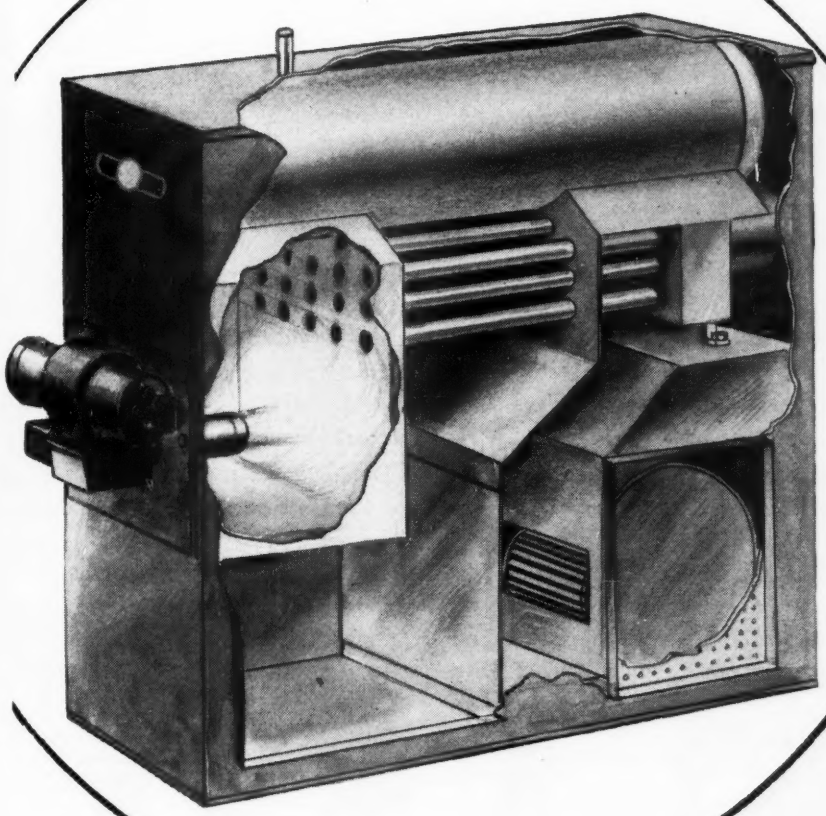
SCULLY SIGNAL CO.
76 First Street
Cambridge 41, Mass.

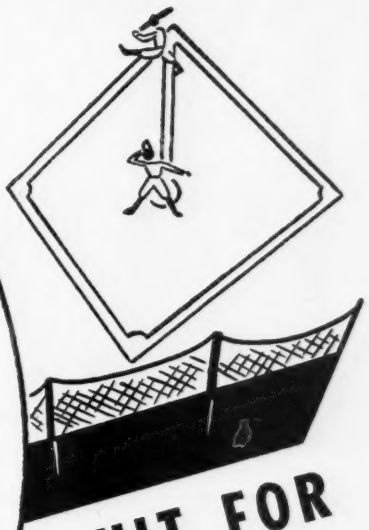
WHEN ORDERING be sure and give us the OUTSIDE measurement across your gun nozzle.

In one SMALL convenient carrying box (weighs only few pounds complete) you can have ALL the connections needed for making up to 1¼", 1½", or 2" male or female fill pipe.

TO MAKE A QUICK OIL FILL PIPE CONNECTION USE . . . FASFILL

OVER THE FENCE... TO GREATER PROFITS!





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METROPAC

The AIR CONDITIONER

that supplies your customers with

- **WINTER** — HUMIDIFIED WARM AIR
- **SUMMER** — FILTERED AIR CIRCULATION
- **YEAR 'ROUND** — DOMESTIC HOT WATER

Metropac is sure to win in comfort and economy . . . cuts fuel consumption by incorporating domestic hot water within the forced warm air furnace!

ONE UNIT

contains all these features:

- Gun Type Oil Burner
- Automatic Humidifier
- Fiber Glass Filters
- Monel Non-Corrosive Hot Water Storage Tank
- Four Standard Controls

AVAILABLE IN 3 SIZES—AT THE REGISTER
70,000 120,000 180,000 BTU's

U. S. Patent No. 2212222
Other Patents Applied For

IMMEDIATE DELIVERY
Franchises Available to Preferred Dealers

METROMATIC MANUFACTURING CO.

EVERETT 49, MASSACHUSETTS

WRITE TODAY!

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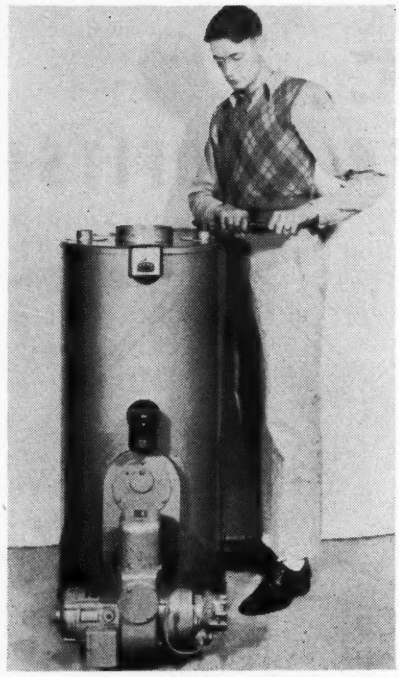

the smoke chamber for cleaning of flue tubes and spirals. A double wrapped copper tube surrounding the boiler tube functions as a hot water coil and is removable through an outlet on top of the boiler.

The Bantam vertical, steel, fire-tube type boiler, rated at 440 sq. ft. hot water, 285 sq. ft. steam standing radiation, is fired with an Aldrich CX oilburner. With a recommended firing rate of .75 gph, the burner can be furnished also for heating plant conversions, with a firing range from .75 to 2 gph.

Wagner Tool Replaces Motor Sleeve Bearings

A TOOL, for use on motors with finished bearing sizes of 0.655, 0.751, 0.812 and 1.062 ins., has been announced by Wagner Electric Corp., St. Louis 14, Mo. Designed to remove worn sleeve bearings from motor endplates and insert new bearings in one operation, the tool consists of a steel rod, finished to accommodate bored bearings on one end and unbored bearings on the other. A central shoulder separates the two ends.

A new bearing is slipped on the rod, its unchamfered end against the shoulder of the tool. A spacer, furnished with the tool, is slipped on with its unchamfered end against the new bearing. The end of the tool is inserted in the old bearing from the inner side of the endplate, a press or a rawhide mallet drives the tool until its shoulder seats against the endplate. The spacer forces out the old bearing and the new bearing as it moves into its proper position forces out the spacer.

Blackmer Dual Truck Pumps For Split-Load Carriers

THREE MODELS of dual truck pumps in sizes of 40, 60 and 100 gpm capacities, have been developed by Blackmer Pump Co., Grand Rapids, Mich., for split-load gasoline and fueloil carriers. Reported to permit separate or simultaneous unloading of one or two truck tank compartments, the models eliminate leakage between pump units with an inserted dual sealing element in a self-contained cartridge. The seal is spring-loaded, including both chevron packing and mechanical rotary seal features.

Designated models DTR, the pumps are equipped with nonmetallic sliding vanes for quiet operation. The 40 gpm model consists of two units mounted on a common base, in-line, with a single stainless steel shaft. The largest size may be manifolded to serve as a single suc-

GENERAL CONTROLS
THE ACKNOWLEDGED STANDARD IN AUTOMATIC PRESSURE, TEMPERATURE, LEVEL AND FLOW CONTROL UNITS
Here are a few of an outstanding line of Controls for Industrial, Commercial and Domestic applications.
★ALL-GAS CONTROLS
★AIRCRAFT CONTROLS, ELECTRIC
★AUTOMATIC SAFETY PILOTS
★GAS REGULATORS
★LOW WATER CONTROLS
★GOVERNOR TYPE VALVES
★HI-LOW-OFF VALVES
★INDUSTRIAL VALVES
★LOW PRESSURE GAS VALVES
★MOTOR OPERATED VALVES
★MAGNETIC GAS VALVES
★PILOT BURNERS
★PILOT GENERATORS
★REFRIGERATION VALVES
★SOLENOID VALVES
★STRAINERS—RELAYS
★GAS COCK SAFETY VALVES
★THERMOSTATIC CONTROLS
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★THERMOPILOTS
Controls for air, water, steam, natural, manufactured and liquefied petroleum gases, light and heavy oils, etc., refrigerants such as: freon, methyl chloride, sulphur dioxide and ammonia.
A.C. or D.C., normally closed or open types. High and low pressures and temperatures. PROVED AND IMPROVED PERFORMANCE IS PROOF THAT YOU CAN'T BUY BETTER CONTROLS.
FOR COMPLETE SPECIFICATIONS REQUEST NEW CATALOG.
GENERAL CONTROLS
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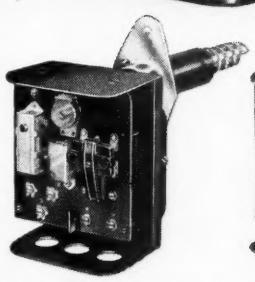
FACTORY BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

GIVE YOUR CUSTOMERS

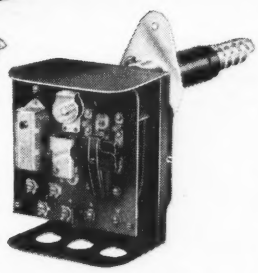
Low Voltage Protection

WITH

PENN SAFTROLS



Interior of Type 670 Saftrol, for continuous ignition burners.



Type 672 is designed for service on intermittent ignition burners.

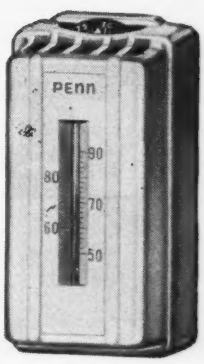
Automatic instantaneous shutdown of the oil burner if line voltage drops below safe limits is an extra protection exclusively available in Penn oil burner stack switches. Experienced service men will appreciate this extra safety factor. This feature eliminates the possible hazard of continued oil delivery into a warm combustion chamber when ignition has been interrupted by an excessive drop in line voltage.

Penn Saftrols are designed to stop all burner functions when voltage drops to approximately 70, during operation. The relay will pull in only when voltage is 90 or higher. Both types—continuous and intermittent ignition—lock out under sustained low voltage conditions... they automatically recycle on voltage interruption.

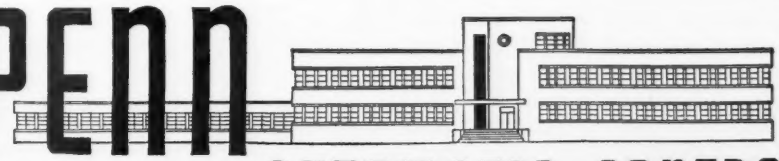
Penn Heat Anticipation Means Closer Temperature Control

For more than 15 years Penn Heat Anticipation has proved its accuracy and dependability. The Penn thermostat holds temperatures within a half degree of the selected level—avoids alternate "chilling" and "baking" and the fuel waste that goes with wide temperature swings.

You, too, will find Penn Heat Anticipation the answer to your customers' demand for real heating comfort. Automatic night set-back of temperature is provided by Tem-Clock, a dependable electric timepiece which may be installed in any room, regardless of thermostat location. Standardize on Penn dependable heating controls. **Penn Electric Switch Co., Goshen, Ind.** Export Division: 13 E. 40th St., New York. In Canada: Penn Controls Ltd., Toronto, Ont.



PENN



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES

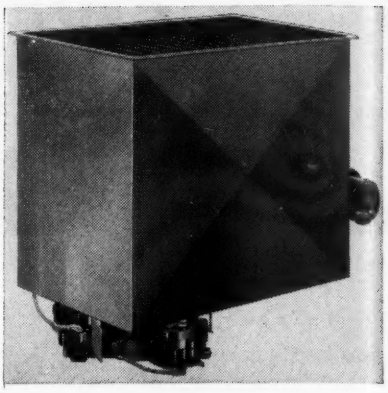
fuel oil heat

tion and discharge pump of 200 gpm capacity. Gpm capacities are rated at 500 to 575 gpm and 40 psi as determined by tests using No. 2 fueloil.

Pro-Therm Floor Furnaces Offered In Three Models

THREE MODELS of Pro-Therm oilfired floor furnaces, announced by Thermo-Products, Inc., North Judson, Ind., consist of one model equipped with a forced draft vaporizing oilburner and two equipped with natural draft burners. Commercial Standards C.S. 113 ratings for the natural draft units are 48,700 Btu/hr, for the mechanical draft model, 56,200 Btu/hr. The mechanical draft and one of the natural draft units are furnished with a thermostat for automatic operation. The second natural draft model operates with manual control.

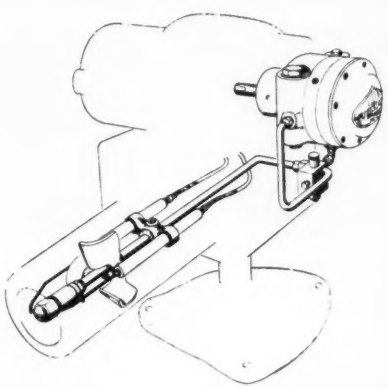
Wiring installed at the factory makes it necessary only to plug into a domestic electric circuit for the mechanical draft model. Heavy gauge aluminized steel is used in the combustion drum and heat exchanger. A removable door in the



bottom of the furnace permits cleaning the furnace casing without disturbing the unit, while servicing is facilitated by the ability to lift out the combustion section by disconnecting the drum from the radiator and leaving the stack connection intact.

Fuel-Master Industries Offers Low Pressure Conversion Unit

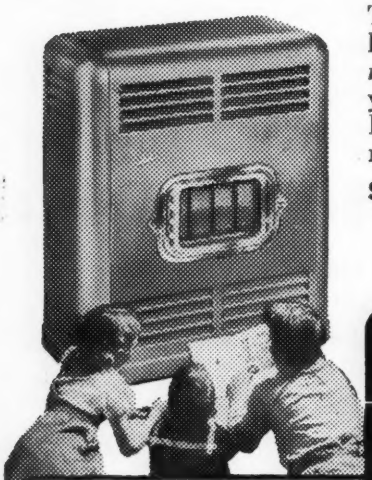
A LOW PRESSURE type oilburner conversion unit, announced by Fuel-Master Industries, Galva, Ill., is to be furnished as



original equipment for burner manufacturers and to convert existing high pressure type burners. Development work dating back to 1942-43 established the background for production of the unit, described as capable of dependable metering of minute quantities of oil, complete mixing and combustion. It has been designed to operate with commercial grades of fueloil, with data cited to show metering and burning of oil at rates as low as two qts. per hr.

The conversion unit will consist of a low pressure fuel unit, plus a complete gun and nozzle group to include mixture turbulator and shielded ignition assembly. Installation of the unit is facilitated by its construction, which is identical with mounting dimensions of existing high pressure units.

M. H. Braden, long associated with



There's a market for SPARK oil heaters NOW! Installation *right now* has special advantages to you and your customers...avoids last minute rush and delays; makes winter comfort certain.

SPARK HAS NEW MODELS— NEW, LOW PRICES.

Write for details

SPARK OIL BURNING HEATERS

A product of
SPARK STOVE CO., INC.
OAKLAND 1, CALIF

SPARK Stove Co., Inc.
2619 E. 12th St., Oakland 1, Calif.

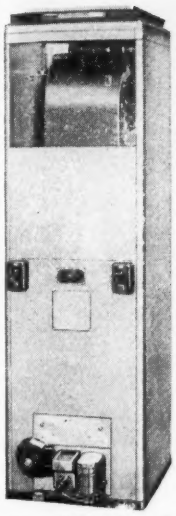
Gentlemen: Please send me complete information on SPARK oil burning heaters and your SPARK dealer plan.

*Name*_____

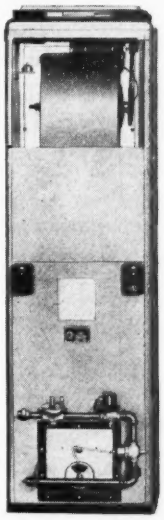
*Firm*_____

*Address*_____

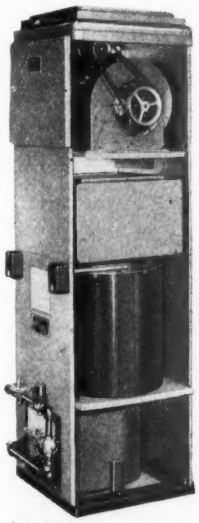
*City*_____ *State*_____



No. VUC-75-E, Oil Counterflow Air Conditioning Unit 75,100 BTU at discharge outlet.

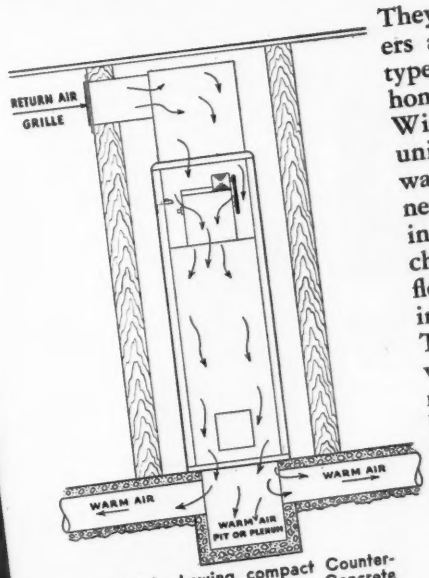


No. GUC-95-E, Gas Counterflow Air Conditioning Unit 76,000 BTU at discharge outlet.



Interior view of Counterflow unit with Moncrief Gas Burner installed.

THEY'RE NEW!
They do the NEW JOB!
MONCRIEF'S *Counterflow*
Air Conditioning Unit for GAS . . . for OIL



Sketch showing compact Counterflow Unit Installation on Concrete Floor Slab.

They do the heating job that many builders and architects want today in ranch type homes—homes without basements—homes with concrete slab floors.

With Blower installed at the top of the unit, discharging the warm air downward through the base of the cabinet, the new Moncrief Counterflow Unit can be installed directly over a pit or plenum chamber provided in the concrete slab floor of the basementless home or building.

The new Moncrief Counterflow Unit provides a low cost installation, requiring a minimum of valuable floor space, in buildings where the heat pipes are desired in or under the concrete slab floor. Designed to burn either Gas or Oil, and highly efficient with either fuel, the new Counterflow Unit is shipped assembled ready for the installation of the Moncrief Gas Burner or the Moncrief Pressure Vaporizing Oil Burner.

THE HENRY FURNACE COMPANY

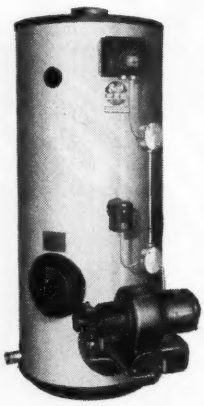
Medina, Ohio

HEATING AND AIR CONDITIONING UNITS — MONCRIEF SINCE 1895 — FURNACE PIPE AND FITTINGS

the oilburner industry and who was instrumental in designing early Oil-O-Matic and Nu-Way low pressure burners, directed development work on the unit.

Bock Boiler-Burner Unit Fired With Gun Type Burner

MODELS 110B and 124B boiler-burner units, announced by Bock Corp., Madison, Wis., are small, compact units, measuring 24 and 28 ins., respectively, outside diameter. Both models are 60" high. They are fired with a gun type oilburner and model 110B, the smaller, has an output of 72,000 Btu or an equivalent rating of 480 sq. ft. of hot water radiation. Model 124B develops 140,000 Btu, or 950 sq. ft. of hot water radiation, EDR. The units are shipped with all wiring in place, equipped with combustion chambers that can be removed through the inspection door.

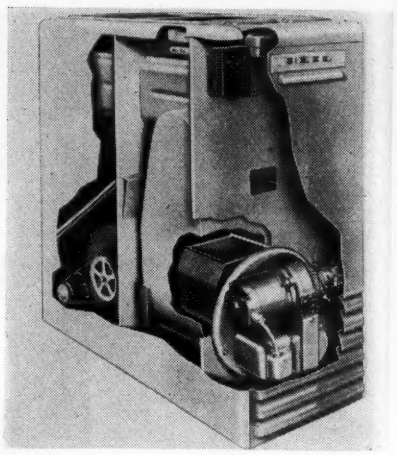


When used for hot water service boilers, the units are designated models 110E and 124E. As such, they have recovery rates of 110 and 220 galls., through an 80° F. rise, storage capacities of 45 and 42 gals., respectively.

Three Heil Furnace Units For Small Home Heating

THREE furnace-burner units, designed by Heil Co., Milwaukee 1, Wis., are intended to accommodate the trend toward small homes. Two of the new units are oilfired, one with a pressure atomizing, the other with a vaporizing burner. Ratings are 80,000 and 70,000 Btu/hr output. The third unit is gasfired, with an input of 100,000 Btu/hr, featuring an oversize, slow speed fan and "floating" motor for quiet circulation of the filtered, humidified air.

All three furnaces are compact, measuring 21" wide by 52" deep and 52" high. The design of heat exchangers and tubes contribute to the space saving size of the units and all feature interchangeability of burners to permit switching easily from gas to oilfiring, and vice versa.



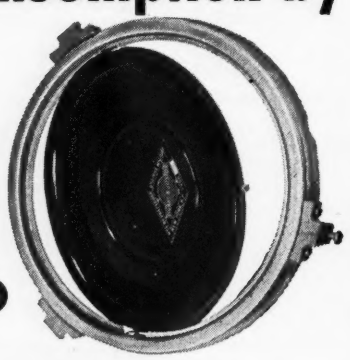
York Adds Model LC9 Gun Burner to Line

MODEL LC9, gun type conversion oilburner for firing rates from 1 to 2¼ gph, has been added to its York-Heat line by York-Shipley, Inc., York, Pa. Standard interchangeable parts are used throughout and the unit is shipped complete with controls. Standard flange-mounted motors are used.

PREFERRED
DRAFT-A-JUSTORS

Cut Fuel Consumption by

10% TO 30%



The *Preferred* Draft-A-Justor is the original, patented Draft-A-Justor . . . improved to include the latest in engineering developments.

Stainless steel bearings and weather resistant metals provide long-life service without breakdown due to rust or wear . . . assure *continuous* fuel savings.

Millions now in satisfactory use.

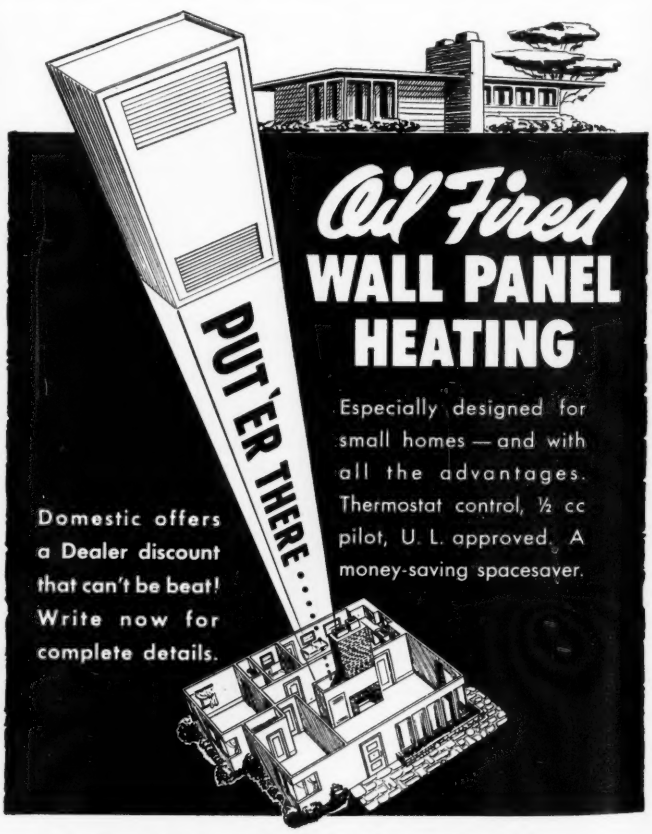
WRITE FOR DESCRIPTIVE LITERATURE AND TRADE PRICES.

SIZES

Store, domestic and commercial sizes from 4" to 24" in diameter.

Industrial sizes from 2' x 2' to 5' x 12'.

PREFERRED UTILITIES MFG. CORP.
1860 Broadway, New York 23, N. Y. Boston Office: 839 Beacon St.

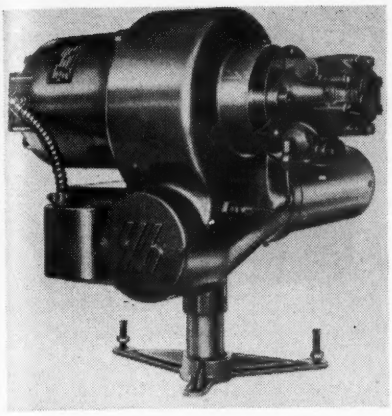


Oil Fired
WALL PANEL HEATING

Especially designed for small homes — and with all the advantages. Thermostat control, ½ cc pilot, U. L. approved. A money-saving spacesaver.

Domestic offers a Dealer discount that can't be beat! Write now for complete details.

DOMESTIC MANUFACTURING CO.
201 Westlake Avenue North Seattle 9, Washington



The burner is designed for the low priced market, and employs a band-type air control in place of the Iris Shutter, standard on other York burners. It uses also a cast-iron housing and air nose instead of an aluminum assembly.

Donaldson Spring Fastener For Sheet Metal Panels

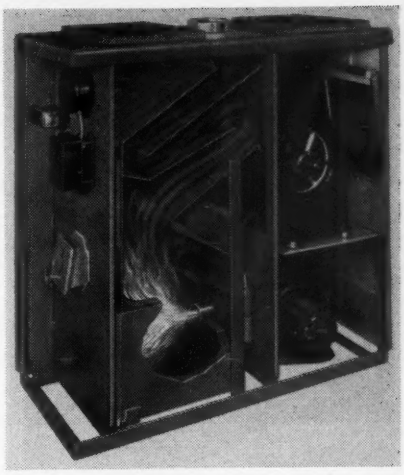
DESIGNED originally for engine hoods, a heavy-duty spring loaded fastener, produced by Donaldson Co., St. Paul 4, Minn., has application for air conditioning ducts, removable sheet panels on air conditioning and heating units. Weighing about 10 oz. and measuring 7" in length, the latch has a take-up of 7/16" and retains approximately 40 to 50 lbs. of tension in the closed position.

Three rivets hold the fastener in place, and a hole drilled through the panel accommodates a bolt unit. To close, the handle of the fastener is pushed down and the bolt locks. A flip of the handle releases the fastener and permits the bolt to be withdrawn.

Repco Oil Furnace Units With Triple Pass Heat Flow

TWO MODELS of Repco oilfired winter air conditioning units, developed by Republic Products Co., Philadelphia 36, Pa., feature triple pass heat flow and a large, accessible clean-out door. The units are shipped complete with a convector type humidifier, two 16" x 20" spun glass air filters and a multi-blade centrifugal type circulating blower. Model 90 has a rated capacity of 95,000 Btu at the bonnet, model 110 develops 115,000 Btu. Both have 45 sq. ft. of heating surface.

The entire unit is enclosed in a furniture steel cabinet, accessible from the front and rear. Jacketed, both models measure 22½" wide, 49" high and 50" deep, and have 14" x 18" warm air and return air openings.



Hilken Heat Jacket Is Boiler Economizer

THE HEAT JACKET, a product announced recently and distributed by Hilken Htg. Co., Bloomfield, N. J., is a metal, double-walled jacket that encases the back and two sides of boilers or furnaces. It is intended to divert and slow down flue gases and extract from

PORTABLE TEMPERATURE RECORDER . . .

Indispensable for SALES, INSTALLATION and SERVICE

"Very useful for selling installation jobs."

"Very satisfactory for recording outdoor temperature for 'degree day' operations."

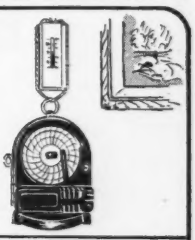
"Makes it easy to check proper thermostat location."

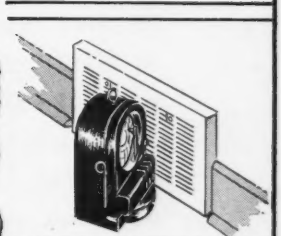
"Used all the time for balancing heating systems."

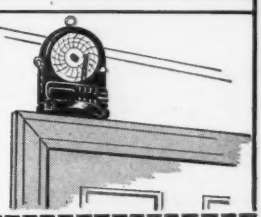
"Gives me proof of a good installation."

"Has been invaluable as proof in settling heating complaints."

"Helped me discover incorrect 'night set-back' of clock thermostat in seconds instead of hours."







The TEMPSCRIBE Temperature Recorder gives continuous time-temperature records of room temperature or of air temperature at any specific point, such as at the thermostat, at floor and ceiling levels, and above the radiators or in front of warm air registers. The temperature graph, as recorded on a 4" chart, shows at a glance the highest and lowest temperature during the test period, duration of any temperature extreme, and frequency and spread of temperature fluctuations. The instrument is compact, self-contained; no electrical connection; requires no watching. Can be stood anywhere or hung on wall. Available in ranges to cover —30° F. to +160° F. temperatures. Choice of spring wound chart drives: 8 hour, 24 hour, or 7 day rotation.

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Ask your jobber about TEMPSCRIBE Recorders, or mail coupon for Bulletin 720

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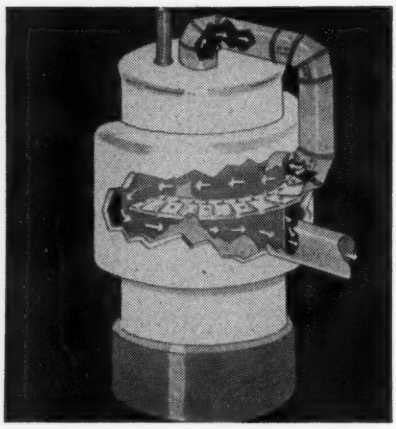
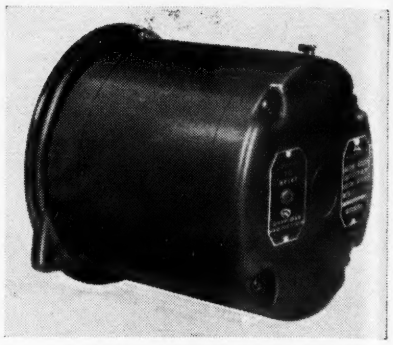


them additional heat before releasing them up the chimney.

It is attached to the boiler or furnace, and the smoke pipe run from the boiler outlet to the top of the jacket. The flue gases circulate through a series of hollow chambers to extract heat that otherwise would be wasted.

Anco Burner Motor Has 1/8 Hp. Capacity

THE A-E oilburner motor, announced by Anco Products Corp., Paterson, N. J., is rated at 1/8 hp, 1725 rpm and is claimed to have a high starting torque.



The motor includes manual-reset overload protection and hand-wound stators, impregnated with high dielectric insulating varnish. Aluminum alloy and bells are standard equipment on the motors, which feature also statically and dynamically balanced rotors. The completely enclosed housing is constructed in accordance with Underwriters' recommendations.

Sell Cost-Conscious Commercial and Industrial Oil Burner Users... ...Show Them How

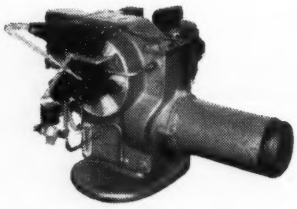
To Cut Costs With An Economically Operating

Cleaver-Brooks
HEV-E-OIL BURNER
USING LOW-COST No. 5 OIL

Quick sales and profits are yours when you offer your customers and prospects a chance to cut operating costs using low-cost, high heat value No. 5 fuel oil.

The economically operating Cleaver-Brooks HEV-E-OIL BURNER efficiently using low-cost No. 5 oil, assures substantial savings to hundreds of commercial and industrial oil-burner users in stores, factories, green houses, apartments, small laundries, cleaners, dyers, pressers, and processing establishments of all kinds.

Write today—for complete dealer and distributor information. Cleaver-Brooks Company, 363 E. Keefe Ave., Milwaukee 12, Wis.

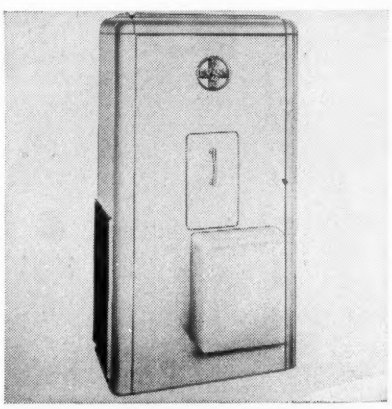


CLEAVER-BROOKS HEV-E-OIL BURNER FEATURES

LOW PRESSURE AIR ATOMIZATION
AUTOMATIC ELECTRIC IGNITION
LOW FIRE START • FLAME MODULATION
RESPONSE TO LOAD REQUIREMENTS
SIZES: 1 TO 40 G.P.H.

Evans Model 379 Furnace Unit Fired With Vaporizing Burner

PRODUCTION of a new packaged, oilfired forced air furnace unit for the smaller home has been announced by Evans Products Co., Plymouth, Mich. Employing a stainless steel vaporizing burner, the unit is finished in white, is completely automatic, factory assembled and engineered for quick installations. Controls are enclosed on the outside front of the jacket, with a two speed draft booster furnished to insure adequate draft for burner firing.

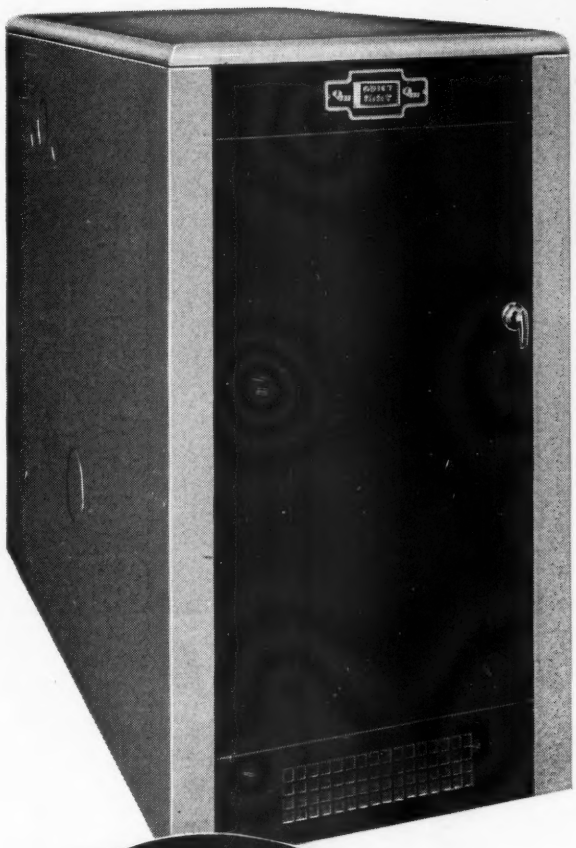


Model 379, with a bonnet output of 82,500 Btu/hr, is equipped with either blade type blower or double inlet wheel blower, with filter and housing. Measurements are 63¼" high, 33¼" wide and 19¼" front to back. Supplementing the company's present line of oilfired

newest

profit-maker

for Quiet MAY dealers



QUIET MAY

BOILER-BURNER UNIT

Another big reason to explore the possibilities of a Quiet MAY dealership in your community... right now!

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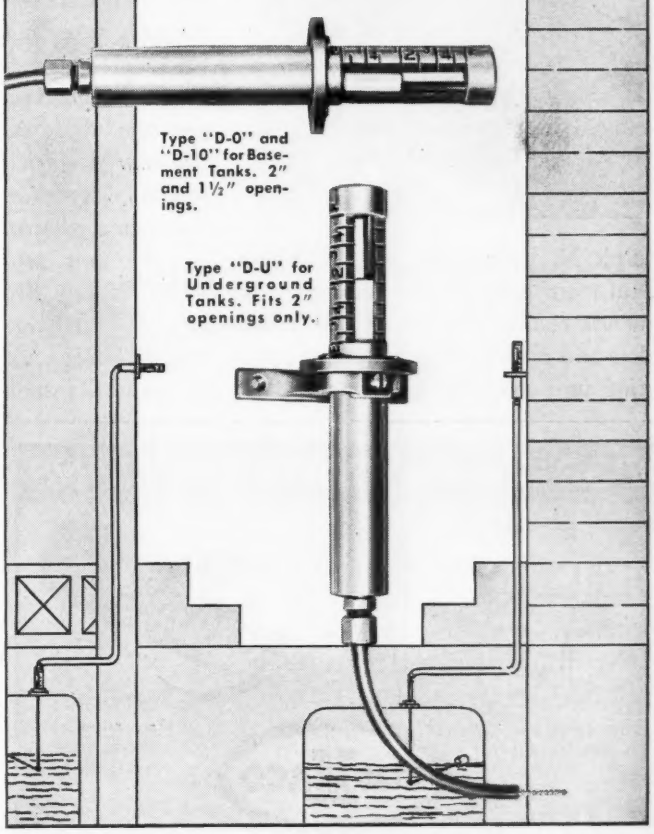
fueloil & oil heat

Sentry AT-A-GLANCE REMOTE READING Tank Gauges

For accurate, easy reading of tanks — indoors, outside or underground.



Simple, Inexpensive, Dependable Easy to Install Gauges for every use

Long wanted — long needed. Sentry now brings you remote reading gauges that accurately indicate correct liquid level at all times. Accuracy not affected by changes or variations of specific gravity of oil. Can be installed with or without additional gauge on tank for dual location reading. No unnecessary fittings, bulbs or levers for oil man to tamper with . . . no need for access to building. Stainless steel and brass extension lines—cast aluminum, weatherproof thermometer type indicator, calibrated in fractions. Easy to read — unconditionally guaranteed. Write for descriptive folder showing complete line.

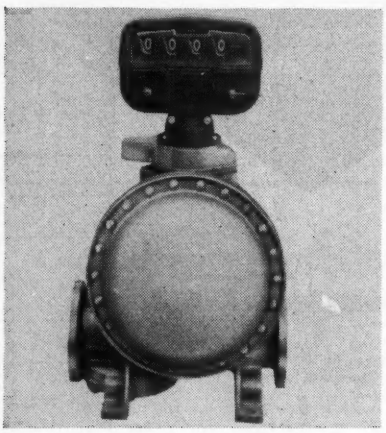
KRUEGER Sentry GAUGES

GREEN BAY • WISCONSIN

heaters, the new model can be furnished with a directional heat outlay accessory to convert it into a commercial heating unit.

Brodie BiRotor Meters With Interchangeable Measuring Unit

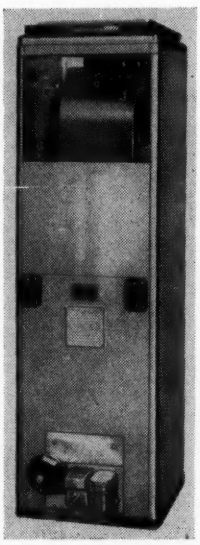
A LINE of all-steel, positive-displacement BiRotor meters, announced recently by



Ralph N. Brodie Co., Inc., Oakland, Calif., are petroleum meters, embodying new features. Design includes a complete and readily interchangeable measuring unit assembly, composed of two synchronized helical rotors, described as capable of rotating in static and dynamic balance under all operating conditions.

Olsen Counterflow Unit Is Small, Compact Furnace

COUNTERFLOW Utility air conditioning units, announced by C. A. Olsen Mfg. Co., Elyria, Ohio, manufacturers of the Luxaire line, are available for gas or oilfiring. The unit was developed to meet heating requirements of ranch type and basementless homes that are built on a concrete slab. As an oilfired model, utilizing a pressure vaporizing oilburner, the unit produces 75,100 Btu at the discharge outlet. It is factory assembled and requires small installation space.

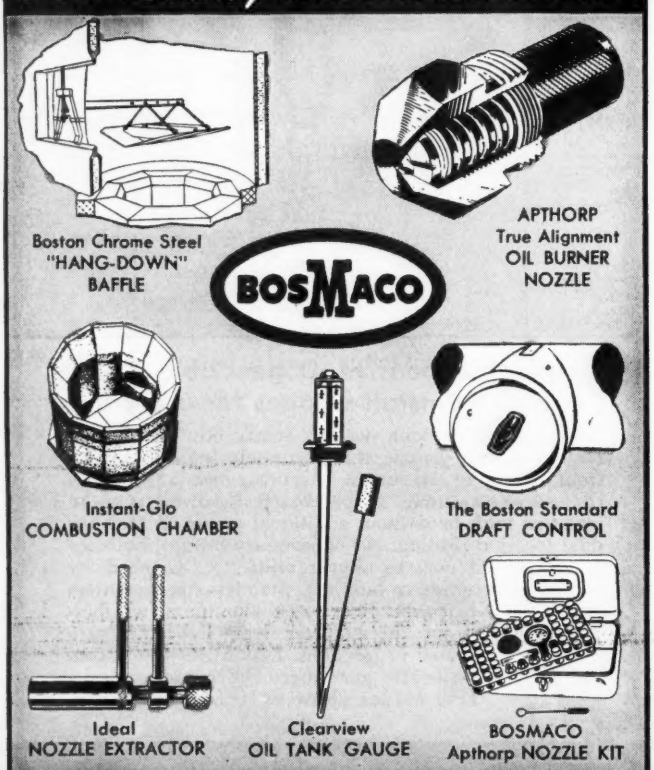


Placed over a pit or disbursing chamber in the floor, heat produced by the Counterflow models passes through the bottom of the heating unit into the pit or disbursing chamber and then into heat pipes or ducts imbedded in the concrete slab. When the pipes or ducts are run in the crawl space under the concrete slab, the unit is placed over a plenum chamber.

Associated Valve Offers Three Sizes Of Needle Valves

CHARACTERIZED needle valves, available from Associated Valve & Engineering Co., Chicago 21, Ill., are made in ¼", ⅜" and ½" sizes. No. 1050 and 1051 valves were designed as high grade corrosion resisting throttling valves, with needle point proportioned to give graduated control from closed to open position. The seat in the valve body is of Hastelloy "C," with Teflon stem packing. Back-seating on the stem permits changing the packing while the valve is under pressure. In addition, No. 1051 features a Teflon shut-off disc. Designed for operation under maximum pressures of 2,000 lbs. psig; 550° F. temperatures.

FOR Quality INSTALLATIONS



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BOSTON MACHINE WORKS COMPANY

Oil Heating Supplies Division, Manufacturers, Lynn, Mass.

DELAVAN.. SLUDGE SOLVENT

SATISFACTION GUARANTEED

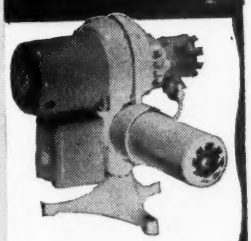
At last—a sludge solvent that really keeps tanks, lines, filters and nozzles CLEAN. Dissolves sludge, prevents formation of soot. Absolutely safe! Sold on a Money-Back Guarantee of satisfaction.

DELAVAN ENGINEERING CO.

Established 1937

DES MOINES 9, IOWA

The Right Combination for SALES and PROFITS



REAL CONVENIENCE AND HEATING COMFORT WITH *Nu-Way* OIL BURNERS

You can be dressed in your dressiest-best to "fix the furnace" when you convert to a Nu-Way Oil Burner! No work . . . no mess . . . no trouble . . . just a flick of the finger sets the thermostat at the desired temperature . . . your Nu-Way Oil Burner *quietly* does the rest. You get all the heat you want when you want it . . . and the heat is *clean* heat. Your Nu-Way Oil Burner provides convenience and comfort plus *real economy* of operation. Patented Air Control assures maximum heating efficiency. Patented Shielded Nozzle holds fuel consumption at low level all seasons. Sold through your local heating contractor!

THE NU-WAY CORPORATION
ROCK ISLAND, ILLINOIS

"AUTOMATIC OIL HEAT EXCLUSIVELY SINCE 1921"

It all adds up . . . a quality product like the Nu-Way Oil Burner — *plus* a hard-hitting advertising program — equals more sales and profits for Nu-Way distributors and their dealers. Effective advertisements like the one shown here will make nearly 19,000,000 contacts this fall and winter in five leading national consumer magazines — *American Home, Better Homes & Gardens, House and Garden, House Beautiful and House Beautiful Building Manual.*

These ads will deliver Nu-Way's sales message, pointing out Nu-Way's extra heating comfort and convenience, and exclusive features. Prospective buyers will be directed to their "local heating contractor." Best of all Nu-Way's dynamic advertising program includes folders, mailing pieces, newspaper mats, and a new catalog instruction book . . . real sales helps for the men meeting the prospect.

Write for new folder containing details on the Nu-Way Line of Oil Burners.

THE
Nu-Way
CORPORATION
Rock Island, Illinois

OIL HEATING EQUIPMENT

Sold Through Jobbers and Distributors
Also Special Applications for Furnace and Boiler Manufacturers

"AUTOMATIC OIL HEAT EXCLUSIVELY SINCE 1921"

NUMBER 7 . . . the AIR-VENT you can forget . . . NOT REGRET!

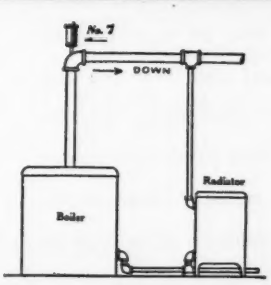
3 Styles for water pressure up to 75 lbs.

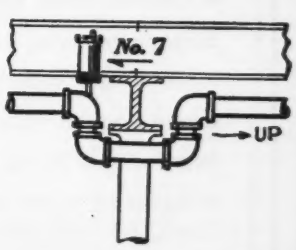
No. 7 Auto-Vent illustrated.

When installing an air vent on hot water heating systems, radiators, convectors, baseboard radiators, unit heaters, etc., be sure its truly automatic. With Maid-O'-Mist Auto-Vents you can automatically vent out the air that causes circulation trouble and heating waste. More and more contractors who value satisfied customers are installing these trouble stoppers. No air chamber is required . . . quick and easy to install. See your jobber or write for data and attractive prices.

"Get that Air Out and Keep it out" with Auto-Vents

Note other "Spots" where AUTO-VENTS protect your work





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AUTOMATIC HUMIDIFIERS
FOR ALL TYPES OF HEATING SYSTEMS

Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Group's activities to reach the editor by the 18th.

I-B-R Votes To Continue Research At May Meeting

THE SEMI-ANNUAL MEETING, held by the Institute of Boiler and Radiator Manufacturers, New York 16, N. Y., at Absecon, N. J. on May 23, 24 and 25, was the occasion for members to vote for continuation for another year of the Institute's research program at the University of Illinois. How to reduce the cost of hot water and steam heating installations will be one of the primary objectives of the program.

Other subjects discussed included the consumer advertising program, field training program, short courses and distribution of I-B-R installation guides. The advertising program is continuing in leading consumer magazines and a new project, scheduled to be started later this year, is a field training program. It is expected that classes will be held in the area adjacent to New York City. A short course, June 14 to 17, again was sponsored by the Institute at the University of Illinois and instructors and lectures were provided for a second short course at Virginia Polytechnic Institute, July 11 to 14.

It was reported at the meeting that copies of two new installation guides are being distributed. Guide No. 100 covers one-pipe forced circulation hot water heating systems up to 1½" mains, both iron pipe and copper tubing, and Guide No. 5 covers all types of baseboards.

Chicago Groups Hold Fifth Combined Outing

THE FIFTH and most successful annual outing sponsored jointly by the Burning Oil Distributors Association and Chicago Oil Burner Association, both Chicago, was held June 21 at the Itasca Country Club. A total of 151 participated in the golf tournament and 218 were present for dinner.

Edward Maguire, Deep Rock Oil Corp., won the BODA cup and Frank Belmont, Braun Bros. Oil Co., won the COBA cup for the second time and thus retains it permanently. John Wagner, Kutten Bros., who in past competition has won permanently both cups and no longer can compete for them, won a prize for low gross score. All other prizes were divided pro-rata on the basis of low net (Peoria system), with first low net going to Joe Reidy, Wood River Refining Co.; second low net to C. T. Rickette, a guest and third low net to Ray Houston, Arrow Petroleum Co. Many other members and guests participated in taking home a total of 88 prizes awarded during the day.

Bureau Explains Baseboard Heating Systems In Booklet

"BASEBOARD HEATING" is the title of a 16-page booklet published by Plumbing and Heating Industries Bureau, Chicago 1, Ill., describing various types of baseboard heating systems. Eight illustrations show different types of equipment and two diagrams illustrate piping hook-ups. Under "Highlights" the booklet points out the advantages of baseboard heating systems, explaining they are adaptable

ARE YOU MISSING A GOOD DEAL?

General Filters thinks you are if you don't install a General Filter for every one of your fuel oil burner customers. It's a "good deal" for the customer since it greatly aids in eliminating troubles due to clogged nozzles and it's a profitable service item for you. If you haven't already done so, investigate by writing to your jobber or directly to us.

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You can put furnace cleaning on a money making basis by using a Grand Rapids Furnace Cleaner. High velocity suction scoops up all deposits of soot, ashes and carbon, cleaning the heating plant and re-establishing full efficiency. Special attachments clean flues, radiators, right angle turns and other hard-to-reach areas. The job is done quickly and completely. Customers are highly satisfied.

The Grand Rapids DeLuxe Furnace Cleaner is also your "in" for more than cleaning profits. By checking over and inspecting the heating plant as you clean it you are in a position to make timely recommendations for new equipment or repairs. This means better service for customers . . . more profits for you.

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233 Stevens St., S.W. Grand Rapids 7, Mich.

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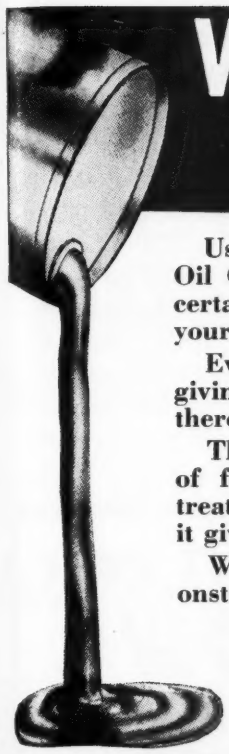

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Even-Flo improves atomization, giving more complete combustion, thereby reducing soot deposit.

That over *1,000,000,000* gallons of fuel oil have been successfully treated with Even-Flo is proof that it gives "TOPS" in results.

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Individual Water Treatments—Soot Removers

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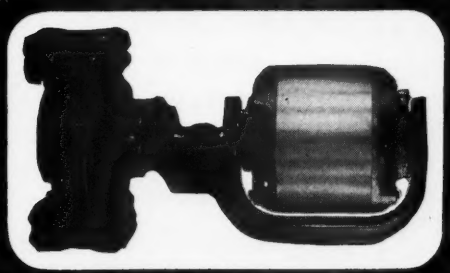
GLOBE *Hot Water* CIRCULATORS



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SAVE ON THIS QUALITY-ENGINEERED CIRCULATOR

- Hardened steel shaft, precision ground.
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- Extra long, OILITE, oil-impregnated bronze bearings.
- Flexible neoprene coupling.
- 1/6 hp. Westinghouse, or equivalent, motor.

Precision-engineered, tough, and rugged. The GLOBE Hot Water Circulator cost less than other circulators of comparable quality.

Manufacturers of Low Water Cut-Offs and Controls for a Quarter Century.

GLOBE CONTROLS CO.
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EXCLUSIVE TERRITORIES AVAILABLE

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The SENSATIONAL

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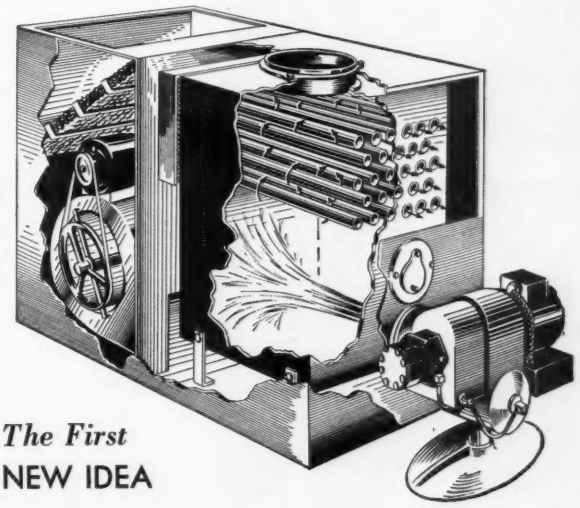

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HEAT TRANSFER
IN YEARS!

NEW ECONOMY! NEW EFFICIENCY!

★ Tubes extract the heat from flue gases
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★ Parts easy to reach
★ Simple installation

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TURB-O-TUBE FURNACE, INC.
106 KINGSLEY STREET
BUFFALO 8, N. Y.

to new or existing construction.

The booklet, published to provide a simple, non-technical description of baseboard heating equipment, covers units now being made by 14 manufacturers. Copies at 10¢ each, may be obtained from the Bureau.

New York Dealers Hold Successful Field Day

THE ANNUAL OUTING and field day, held by New York Oil Heating Association, Long Island City 1, N. Y., on June 28 at Schmidt's Farm, Scarsdale, N. Y., was adjudged a success by the 150 members and guests who attended. A beautiful, sunshiny day permitted the softball game and other athletic events to be run off without a delay and, in the evening, welcome cool breezes allowed diners to enjoy an excellent supper in comfort.

Arthur Milton, a NYOHA member, won a television set, the major individual prize awarded. A softball game between manufacturers and dealers was the main athletic event and the manufacturers won. Captains Frank Ammon and Arthur Hanson received prizes. Also, in the tug-of-war, captains of both teams received awards. They were A. DeAngelis and Bill Manion. Other events and their winners: Nail driving, Sam Parisi; Baseball pitching, Harry Weiner; Sack race, Gus Triola; Horseshoe pitching, Clyde Caldwell and George Meier; Egg tossing, Art Cohen and Stan Walsh.

The next social event planned by the Association is its annual golf outing, to be held August 10 at Pomonok Country Club, Flushing, N. Y.

Release Second Edition Of Attic Ventilation Code

THE SECOND EDITION of the Attic Ventilation Code, published by the Propeller Fan Manufacturers' Association, Detroit 26, Mich., is available for distribution. Prepared as a result of the acceptance enjoyed by the first edition, the Code has been rewritten to include new material and data.

The basic requirements of satisfactory attic ventilation are embodied in the eleven sections into which the Code is divided. These include such subjects as geographical variations in house structures, location and characteristics of the fan and ventilating unit, air velocities, fan types, electrical installation and operational suggestions. A map of the United States is divided into two portions, one showing the areas where a minimum air change each minute and a half is recommended, the other indicating those sections where the minimum should be an air change every minute. An accompanying table indicates the minimum gross outlet areas for attic fan discharge vents, with eight typical discharge openings illustrated.

Mid-West Old Timers Get Together At Outing

FORTY-FIVE attended the golf tournament and outing held by the Mid-West Region, Old Timers Club of the Oilburner Industry, Inc., Chicago, on July 15 at Itasca Country Club. Arranged by Charlie Bendix, Mid-West regional chairman, in addition to the golf tournament, a feature of the day was a tug-of-war with a 2" x 40' rope on a very smooth ballroom floor after dinner. The Old Timers also took part in a sling-

Listed by Underwriters Laboratories

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REMOVE SLUDGE AND DEBRIS
FROM DOMESTIC AND INDUSTRIAL OIL LINES

Single and Duplex Separators — both Standard and High Pressure —for light and heavy oil. You can have any practical degree of separation by simply changing the basket—no tools needed. Outside installation gives instant, easy access *without the dismantling of your burner.*

Eliminate filter replacement costs entirely — cleaning of Kraissl filter baskets restores original efficiency.

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Write today for our Bulletin A-1214-with full information and Specifications on Kraissl Separators.

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CUT FUEL COST NOW

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WITH THE NEW TRU-HEET OIL BURNER

Equipped with

SHELL DEVELOPMENT CO. COMBUSTION HEAD

Also

Many Other New Features

- CO_2 high as 15%—no smoke
- Fuel savings high as 30% and over
- Oil rate 0.50 to 10.00 G.P.H.
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Also Boiler & Warm Air Units

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TRU-HEET COMPANY
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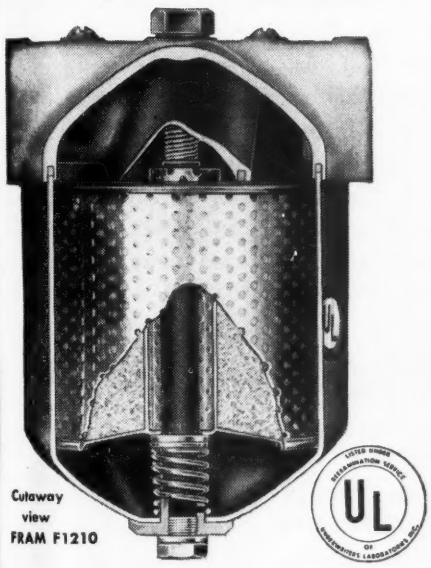
Manufacturers of Fine Oil Burners Since 1928.

NEW FRAM FUEL OIL FILTERS

Cut Service Calls
Build Satisfaction
Make Repeat Profits



Cutaway view FRAM F1210

Filters the oil clean through an entirely new development • Removes dirt, rust, scale, water • Assures steady flow of clean oil to the burner • Protects pump valves and nozzles • Reduces service expense and needless, troublesome calls • Easy to install • Replacement cartridge builds repeat profits • Available in capacities of 2000, 4000, 6000 gallons of oil consumed per year.

FRAM CORPORATION
Providence 16, R. I.

Headquarters for

FRAM OIL · AIR · FUEL FILTERS

shot contest, trying to break light bulbs hung out-doors on a tree. Most appropriate award made during the day was a real door prize, a 2'6" x 6'6" maple finished model purchased from Itasca Lumber Co.

Name Arrangements Chairman For API's 1950 Annual Meeting

APPOINTMENT of Clarence S. Beesemyer, executive vice president, General Petroleum Corp., has been announced by the Western Oil and Gas Association as general chairman in charge of arrangement for the 1950 annual meeting of the American Petroleum Institute.

The meeting will convene in November of next year at Los Angeles and will be the thirtieth national convention of the group.

Oil Heat Old Timers' Fourth Annual Fishing Party

MEMBERS and guests of Oil Heat Old Timers, Inc., Long Island City 1, N. Y., set sail on July 19 from Canarsie Pier, Brooklyn, N. Y., for the fourth annual fishing party sponsored by the group. The good ship Tamboo II, a 60 footer, took the fishermen for a sail across New York's lower bay to Sandy Hook, where all participated in the quest for fluke and porgies.

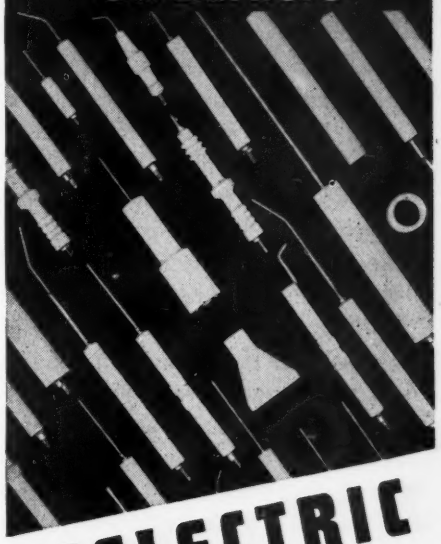
A fishing committee consisting of Russ Dempsey, chairman, Herb Helman and Al Koenig supervised arrangements for the excursion, which left at 8:00 A.M. and returned at 4:30 in the afternoon. 'Twas a fine day for a sunburn so that even those who failed to land a finny friend should have brought home something to remember the trip by!

API Prepares Third Edition of Petroleum Book

A NEW BOOK on petroleum, its history and its growth from scratch to the leadership of the industrial world in less than 90 years, has been published by the Department of Information, American Petroleum Institute, New York 20, N. Y. The new edition of "Petroleum, The Story of An American Industry," is the third issue of a booklet first published by the Institute in 1930.

Completely rewritten and expanded considerably, the latest issue is intended

The Most Widely Used Ignition Assemblies for Oil Burners



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ELECTRODES • BUS BARS
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STANDARD AND SPECIAL ASSEMBLIES IN ALL TYPES AND LENGTHS

The majority of oil burners being installed or serviced today are equipped with Dielectric electrode assemblies . . . and for good reason—

1—They are made with the finest steatite insulators and electrode tips . . . in any designs to meet specific burner requirements.

2—They have all Underwriters Laboratories, Inc., approvals.

3—Standard assemblies are available for quick delivery.

4—Assemblies with special insulator and electrode sizes and shapes can be made on short notice.

In addition, Dielectric high tension cable assemblies and Dielectric bus bars for transformer and electrode layouts are available for any practical burner hook-up.

Let Dielectric's complete, prompt engineering cooperation help improve your burner and expedite production. Write for bulletin.

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to provide answers to the many old and new questions regarding the origin, source and uses of petroleum and its products, as well as to furnish factual information about the complex operations of the industry itself. Well illustrated with maps, charts and drawings, the new book portrays the history of petroleum from its beginnings hundreds of millions of years ago, its "birth" as an industry in Titusville, Pa., in 1859, and its widespread use and benefits in this contemporary period. Special chapters are devoted to discovery and production, refining, transportation, marketing and conservation, the key branches of the industry.

Written in easily understandable language, the book makes an excellent reference manual for libraries and schools, and for the laymen who would like to have a better working knowledge of this great American industry. It is an interesting book too for the thousands of persons employed in both the oil and gas industries.

Single copies are available at $1.00 each, with substantial discounts offered on quantity orders.

Wisconsin OHI Dealers Attend Annual Golf Outing

JULY 29 was the date, Merrill Hills Country Club, the site of the annual golf outing held by Wisconsin Oil-Heat Association, Inc., Milwaukee 2, Wis. Members, guests and members of the Milwaukee Oil Men's Club participated with golfers teeing off between 1 and 2 P.M.

Preceding the dinner was a cocktail party, the fund for which was raised by voluntary donations from individuals and firms. The dinner, with the awarding of prizes, was the final event of the day. Arrangements for the affair were made by an outing committee headed by Clarence Gorder, and assisted by Joseph Holtz, LaVern Schaetzel, Clarence Droegkamp, Richard Holden, J. L. Savage, ex-officio, John Weiler, treasurer and Harold Mottram, Association executive secretary.

◈

Carl Beattie has been appointed field engineer, Duo-Therm Div., Motor Wheel Corp., Lansing, Mich., to conduct service schools, along with regular field engineering assignments. He has been with Motor Wheel in various capacities since 1936 and upon his discharge from Army service joined Duo-Therm's service department.

George M. Frazer has been named market analyst for the Janitrol space heating equipment division, Surface Combustion Corp., Toledo 1, Ohio. Previously associated with Lennox Furnace Co. as market research director, Mr. Frazer will operate from Toledo while conducting surveys on domestic and commercial space heating equipment in various cities.

Henry M. Brundage, manager, automatic heating division, General Electric Co., Air Conditioning Dept., Bloomfield, N. J., was awarded the honorary degree of mechanical engineer by Stevens Institute of Technology, Hoboken, N. J., on June 11, in recognition of his contributions in the field of public service. He attended Stevens in 1918, leaving to join the army, and returned after World War I.

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QUICK TURNOVER STEADY PROFIT

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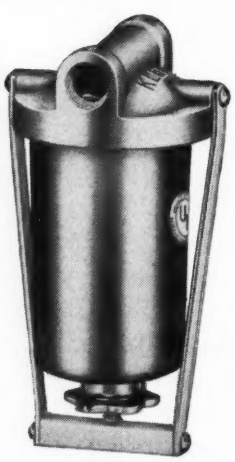
Oil users are quick to see the advantages when you show them the Chemistone filtering unit. Only Klemm has it and only Chemistone does the best filtering job. Traps water, dirt, sediment and any other foreign material. You profit by a good margin on each sale and increased customer goodwill. Model 430 metal bowl, listed by Underwriters' Laboratories, Inc., also available with glass bowl.



Model 430

Klemm

AUTOMOTIVE PRODUCTS COMPANY

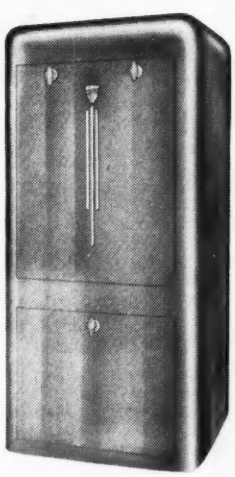
1718 N. Damen Ave. Chicago 47, Ill.

Export Division: Guiterman Co., Inc., 35 S. Williams Street, New York 4, N. Y.

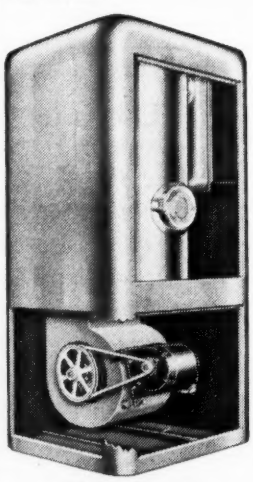
BEAT Price and Quality Competition

WITH THE NEW SILENT SIOUX WINTER AIR CONDITIONER

This new air conditioner is the one unit answer to all your competition! It meets your top quality competition with equal quality. Beats them with lower prices! It equals your low price competition. Betters them in quality! Silent Sioux offers you this winning combination for greatest sales —and lowest inventory!
Comes complete in a "package" unit. Economical to buy—easy to install. Send for full details.



Finished in gray hammertone



Interior view of Silent Sioux

- **85,000 B.T.U. Output**
- **Forced Draft FB-14 Burner**
- **Forced Circulation 1200 CFM**

Comes complete with burner, blower, belt, pulleys, limit control, fan switch, oil control, fused entrance switch, wall thermostat, and draft regulator.

Silent Sioux Oil Burner Corp.
Orange City, Dept. FO89, Iowa
Gentlemen:

At no obligation, send full information on the Silent Sioux Winter Air Conditioner.

Name .....

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City ..... State .....

SEND TODAY!

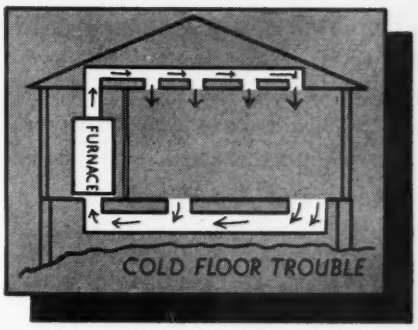
Reader's Problems

Q. Cold floor trouble started after we sold a winter conditioner type oil-fired furnace for a no-basement restaurant building. Furnace is in a utility room, and is hooked to a large return duct located in the cold space under the building. Warm air comes from eight carefully-located ceiling registers. The floor is always cold, but the big complaint comes when the furnace shuts off. Then cold air simply pours from the two big floor registers used as returns. The place is flooded knee-high with terribly cold air. It's worse with the exhaust blower running in the kitchen, and this blower must be used to clear kitchen odors, but even with this blower idle for test the situation is intolerable. We tried to no avail cutting the gph rate and trying to keep the circulating blower of the furnace running constantly, but now are at our wits' end.

O. S., Cleveland.

A. In one similar instance, heating the space under the building ended the trouble completely after months of failure trying other cures. The small sidewall areas of the unheated space under the building were insulated with rock wool at small expense, and the space was heated to 80° or 90° by circulating warm air through it from new ducts connected to the furnace bonnet. The circulating blower's speed and cfm capacity were reduced because with the floor heated the supply and return registers had to carry a reduced Btu load.

To eliminate reverse-circulation when the circulating blower of the furnace stops, you could fit the return duct or the two return registers with some type of automatic damper which closes tightly when the blower is not running. The



damper could be motor-operated or could be drawn open by the suction of the circulating blower. That would end the outpouring of cold air from the return registers with the circulating blower idle. For complete heating comfort, however, a warm floor may be needed.

* * *

Q. Regarding "Controlling H. W. Circulator," p. 144, May, 1949, FUEL-OIL & OIL HEAT.

Using this control hookup (if you can find this old timer and wheedle from me some of those old stack controls) with the R. A. control at such a low setting, "wot hoppens" on say a cast-iron baseboard job designed for 180°

It pays to buy a good tool . . .
It pays to buy a

KENT

DOUBLE SUCTION
Furnace Cleaner

Long life with fewer breakdowns! You can depend on KENT design, quality, and workmanship to do the job you want, when you want it done!

KENT Features

- No outside dust bag!
- No soot passes thru fans!
- 2 fans—powerful suction, less r.p.m.!
- Strong, yet light—easy to carry!
- Easy to empty dust bag!
- Rugged Construction!

BUILT TO LAST!
Backed by 36 Years' Experience

It will pay you to see the KENT before you buy!

THE KENT COMPANY, INC.
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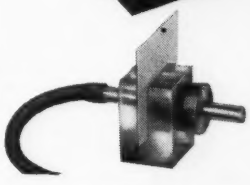
Representatives in Principal Cities
MEMBER OF THE OIL HEAT INSTITUTE OF AMERICA, INC.

WATCH YOUR SMOKE!
with
DWYER TRANSPARENT
SMOKE GAGE



KNOW what your burner or furnace is doing—BE SURE you are getting the maximum amount of CO_2 with clean combustion. The DWYER Smoke Gage gives you an actual sample of smoke for comparison with the DWYER Smoke Chart. For greater fuel saving efficiency with soot-free burning, it's the DWYER Smoke Gage . . . . precision-made, accurate, inexpensive!

DWYER No. 910 Smoke Gage . . $8.50 Complete
(DWYER 910-S Smoke Gage, for use with DWYER Combustion Test Set, no duplication of parts . . . . $4.50)

HOW TO USE IT: With Smoke Gage terminal tube in smoke pipe opening, force smoke sample through paper in Gage holder with aspirator bulb. Remove paper and compare with Chart. It's that easy!

Write for literature describing the complete line of DWYER Test Instruments—Manometers, Draft Gages, etc.

F. W. Dwyer Mfg. Co.
315 South Western Ave. • Chicago 12, Illinois

water when the owner shoots up the thermostat three or four degrees?

I would imagine the burner and circulator would make quite a long run before the thermostat was satisfied and then the circulator would continue to run, causing quite an over-ride.

C.A.W., Coatesville, Pa.

A. The hookup's important feature is that little heat is left in the boiler at the end of an oilburner "on" period. Heat left in the boiler might wander undirected towards those radiators in which water tends to circulate with the circulator idle, or might remain in the boiler and overheat the basement.

Of course, you are correct in pointing out by your question that the use of this hook-up gives, with all other factors about the same, more of a temperature over-ride in the rooms than would come of using, for example, flow control valves that trap heat in the boiler when the thermostat circuit opens. That's the penalty of achieving the fuel economy gained by driving the last drop of heat from the boiler to the radiators. In practice, however, the idea works very well for dealers who use heater-type thermostats with heaters of the proper activity, together with gph rates reasonably low for the heating loads. Starting with 110° boiler temperature, a burner may have to run steadily for two and a half hours to raise the boiler temperature to 170° or 180° if the flame is just large enough for excellent heating on coldest mornings and the system heats a house having five to seven rooms. The circulator runs steadily also, of course. The thermostat with a heater of the proper effect may turn the burner off half an hour earlier under these conditions than a thermostat with no heater. The over-all result is excellent heating. Actual studies of extremely large hot water systems controlled in this way show that their boilers increase in temperature much more slowly, with the burners and circulators running steadily, and that room temperature over-ride is no problem. This hook-up gives excellent results in several large buildings on which we have data with the burners controlled not by room thermostats but by special control systems designed for large buildings and affected by outside temperature.

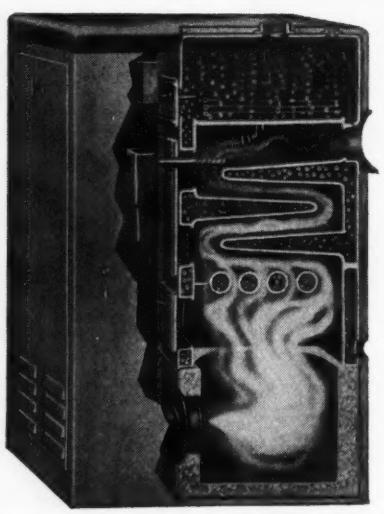
Q. I need data on these subjects: Figuring firing rates for oil-fired steam boilers used in dry cleaning plants; Figuring sizes of suctions and returns.

M.J.A., Astoria, Oregon.

A. To produce approximately the rated horsepower from a boiler that will operate at about 70% efficiency, fire one gallon of oil per hour for every three horsepower for which the boiler is rated. That is, if the boiler is of good design and is not overloaded, divide the horsepower load on it by three to find the firing rate needed for the load. For a 9 hp gross load, fire 3.0 gph; for a 15 hp gross load, fire 5 gph; for a 150 hp gross load, fire 50 gph. In selecting the burner, play safe by planning to install a burner capable of giving a flame at least 25% bigger than seems to be needed for the load.

The rule for sizing suction lines on both light and heavy oil installations is to avoid installing a suction line so small that the size of the line causes the vacuum at the oil pump inlet to be higher than 10". If small size of the line causes the pump to work against a vacuum higher than 10", the suction line should

Steel HEATING UNIT



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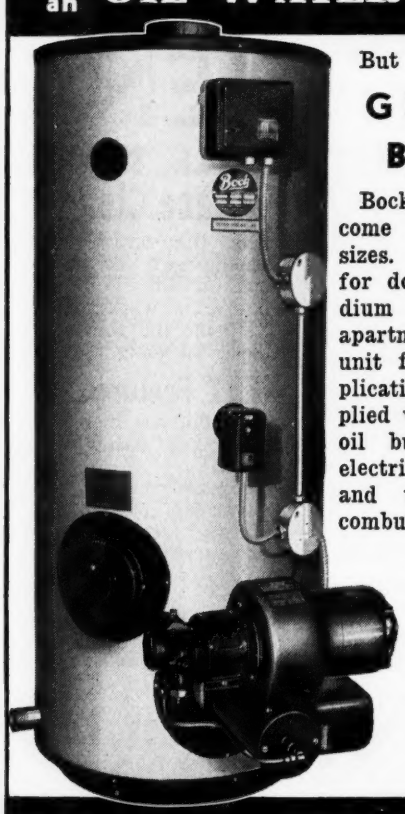
Write for full particulars about Exclusive Franchise for your territory on our full line of MAGIC-HEAT Boilers and Boiler-Burner Units.

Magic-HEAT

Product of
MARIETTA METAL PRODUCTS CORPORATION
MARIETTA, PENNA.

Sell an OIL WATER HEATER



But be sure it has a

GUN TYPE BURNER

Bock Water Heaters come in three popular sizes. A 30 gal. model for domestic use. A medium sized model for apartments and a large unit for heavy duty application. They are supplied with or without the oil burner. Come with electric wiring in place and with a removable combustion chamber

★ *Reliability*
★ *Satisfaction*
★ *Repeat Sales*

Water Heater Headquarters

BOCK Corporation, Madison, Wisconsin

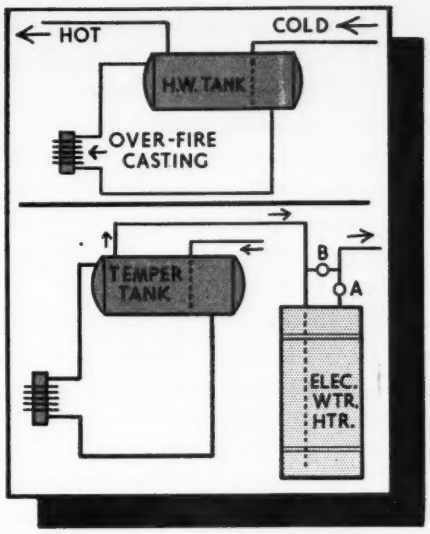
be larger. Of course, high lift from the oil storage tank sometimes gives a vacuum higher than 10" at the pump inlet even with a suction line of ample size. The rule for return lines is to make them the same size as the suction lines. To obtain excellent details on sizing oil lines, write to the fuel unit manufacturers whose advertisements you see in FUEL-OIL & OIL HEAT.

* * *

Q. Higher costs of electric water heating make it necessary for some owners of furnaces, fired by gun burners, to think of over-fire water-heating castings. These owners keep telling us of two methods (a) eliminating the electric water heaters and using their furnaces to heat water in winter, and (b) using some furnace heat and some electricity to heat the water. What do you think they mean?

S. T. W., Buffalo, N. Y.

A. The first method you list includes connecting the over-fire casting to a hot water storage tank as indicated in our upper diagram. This usually works poorly, giving excessive hot water during coldest weather and insufficient hot water on the mildly cold days of the winter.



Our lower diagram shows how to use a tempering tank and over-fire casting to reduce in winter the costs of operating the electric water heater. On one installation in a six-room house occupied by two adults and three children, a burner dealer reports, he used a 50-gallon uninsulated tempering tank and an over-fire casting that heats this tempering tank to a maximum of about 150° on coldest mornings. He says that this cuts electric water heating costs by two-thirds for the winter months and by one-half on a year-around basis.

Our diagrams do not show the drain valves and the temperature and pressure relief valves that must be installed for safety. You need a complete education in these types of layouts to enable you to design and install satisfactory, safe systems.

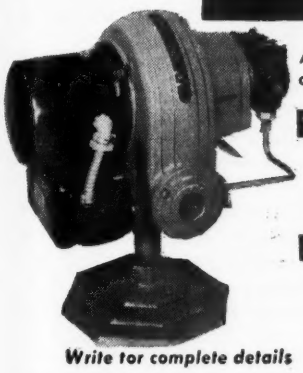
* * *

Q. One of our customers has a conversion burner in a hot water job, firing rate 2.0 gph. The smokepipe is cut down to 7" and goes into a chimney with a lead lining 2" x 9". To overcome draft trouble a fan was installed in smokepipe, but still there is a slight downdraft of half a hundredth, causing soot and fumes.

Originally meant for gas firing, the job has been in ten years but has only recently given trouble.

Can it be that the lead lining has softened and settled? And is a 2 x 9 flue large enough to carry away the gases

important OIL BURNER FACTS ABOUT Radiant THE SERVICEMAN'S BURNER



A nation-wide survey conducted by our advertising agency showed that

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2. Heavy sales are due to
—low cost of upkeep
—ease of installation and servicing
—factory guarantee
—national distribution in protected territories

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Memphis, Tennessee

RADIANT UTILITIES CORP.
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RADIANT OIL BURNER

INCREASE HOT WATER TANK CAPACITIES from 13 to 56%
with THE New BABBIN
Thermostatic Mixing Valve
3/4" — 2"

This BABBIN Valve brings fully dependable thermostatic hot water regulation to the small and large home field. It is adaptable for use on storage tanks, submerged tanks and tank saver units, and many other industrial and domestic applications.

• All Bronze Casting . . . "ADNIC" Corrosion-Resistant Thermostatic Unit • Positive Hot and Cold Water Shut-off • Temperature Range from 70° to 180° F. Only one moving part.

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EXPANDING TYPE SOLID LIQUID FILLED PATENTS
2081728 2282182

Babbin N.Y.C. THERMOSTATIC CONTROLS
258-60 Canal St. New York

from the burner? Or does the fan build up too great pressure in the small duct? It has a 1725 rpm motor.

C.H., St. Paul, Minn.

A. It is unlikely that the lead lining has softened and settled, but you should check on its condition and at the same time find out if it needs cleaning. Remove the smokepipe from the chimney and, using a mirror, look up the flue. If light from the sky does not help enough, use a light bulb or strong flashlight at the bottom of the flue, or even lower a light bulb from the top of the chimney.

While most heating engineers would not recommend starting out with 2.0 gph and a flue only 2" x 9", the fact that the oilburner has been used for ten years and has given trouble only recently proves that in this instance the burner can work satisfactorily with this flue. The burner should work well again after the boiler, smokepipe, smokepipe fan, and flue are thoroughly cleaned, and the burner has been adjusted for clean, bright combustion. If the firebox is in poor condition, replace it with a modern firebox designed for especially clean combustion; high side walls and a step-in or corbel design for the back wall will help. A baffle over the fire should help greatly by increasing the temperature of the fire and giving combustion that is cleaner and more free from odors. By all means, in tuning the burner try several different brand-new nozzles, and atomizing pressure somewhat higher than usual.

You can determine how much pressure the smokepipe fan builds up in the flue by using your draft gauge on the output side of the fan.

* * *

Q. I am a reader of your fine magazine and find in it many very interesting articles especially on combustion chambers, the combustion of fueloil, and how to judge the proper flame size, shape, and color.

I notice from some of these articles that it is possible to adjust a burner and obtain the same CO_2 reading and still have different size fires with different shapes and colors.

Now this is my question: Why wouldn't it be better to have a thermometer or some type of heat indicating instrument to adjust the flame by?

In certain furnaces it is not too easy to see the flame and its size and shape.

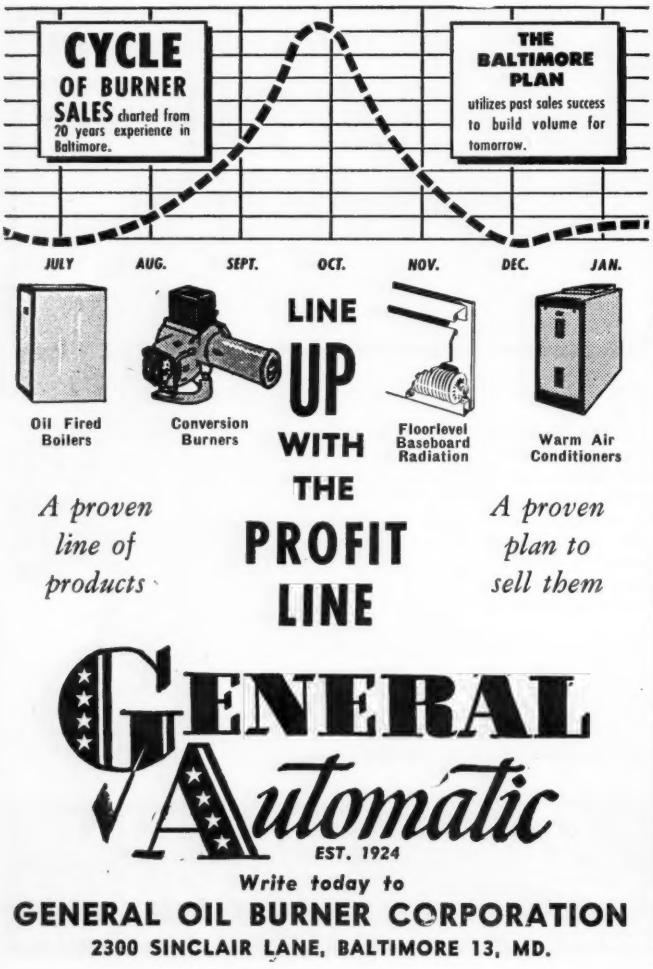
Do you know of any instruments of that description? I am not referring to those on the market which are very expensive.

A.M.H., Port Angeles, Wash.

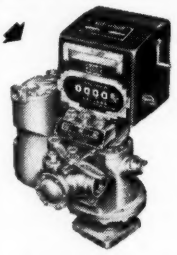
A. As in speaking of a thermometer or other heat indicating instrument you can't be referring to a stack thermometer, since such an instrument is inexpensive and is widely used today, we gather that you are asking about a flame temperature pyrometer to use in adjusting the burner flame.

Even priced relatively low to please you and offered in a form suitable for use in servicing burners, a pyrometer would be of little help to you in adjusting burner flames. On an actual installation, you should not adjust for the hottest flame obtainable. If you tried this, you undoubtedly would wind up with a flame of the wrong size for the heating load, and probably you would wind up with improper content of CO_2 in the flue gases.

We suggest that you follow the stand-



Model TD Truck Meter



Model LJ — 4" Line Meter

GRANCO fast flow meters
speed truck or bulk plant delivery

GRANCO Meters cut overhead, enable your tank trucks to make more "dumps" per day. How? Because they have . . .

- ★ faster flow — extra large metering chamber allows for greater through-put to each revolution of rotor.
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- ★ sustained accuracy — over wide range of flow.
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- ★ Quick, accurate calibration—only rotary meter with easy, positive adjustment.

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OAKLAND 8, CALIFORNIA ★ Makers of Rotary Positive Displacement Pumps and Meters for all Petroleum Products
Sales and Service at your service throughout the nation

ard, time-tested steps that have been used for years now by thousands of well-educated burner service men.

First, use a draft gauge to help you adjust for the proper over-fire draft. Use the lowest over-fire draft which gives none of the troubles of insufficient draft. Read the smokehood draft also because this can be done in a matter of seconds and leads to data on the draft-drop through the furnace or boiler.

Second, use a stack thermometer (which is a relatively low-priced instrument) to find out the stack temperature given by the furnace or boiler when you use a fire size which matches the heating load.

Third, use a CO_2 tester to determine the combustion quality of the installation.

To do advanced work, use also one of the new smoke meters. Such an instrument is of tremendous assistance to the newocmer to service work as well as the combustion expert, as it takes guesswork out of questions as to whether or not there is "perceptible haze or smoke" and whether or not there is a likelihood of excessive carbon being deposited in the flue passages. We are rapidly approaching the time when every well-equipped service man will carry with him a modern smoke tester as well as a draft gauge, stack thermometer, and CO_2 tester.

To be as well qualified for adjusting and servicing burners as the best of combustion experts, you'll have to add on-off and room temperature recorders to the instruments you use. These help greatly in obtaining for you the data you need to give your burner users maximum results.

* * *

Q. We are very much interested in your article in the April issue entitled "How to Figure CFM." We noted, however, you made no reference to heat loss through the floor. All other methods we have used consider the heat loss through the floor and we are wondering if it should be disregarded using your method. Enclosed is a self-addressed envelope for your convenience in replying.

K.H.C., Brockton, Mass.

A. Don't disregard floor loss for a room which has such a loss because plainly, as your other methods show, such a room has a higher heat loss than a room identical except that the space under the floor is heated to about 70°.

Starting on page 91 of our book "Better Oilheating" is a complete explanation of the development of the Shortcut Rule for figuring heat losses. Reading this would indicate to you how to form a Shortcut Rule factor for quickly figuring the loss of a cold floor of the type you have in mind. Simply find in a textbook a coefficient of heat transfer which fits the particular cold floor, and multiply this by 70 (for 70° temperature difference). This gives the factor. To get the heat loss of the floor, multiply the floor area by this factor.

Again, you can follow the pattern of one heating engineer who, frequently encountering 4", 6", or 8" concrete floors covered with ¼" thick floor tile or something similar, simply multiplies the floor area by two and considers the result as typical, uninsulated outside wall area. For example, he would consider 200 sq. ft. of such cold floor as 400 sq. ft. of outside wall; the loss would be obtained by multiplying 400 by 18.

MORE OIL BURNER ACCESSORIES *by Buckeye*

Those two words, "By Buckeye," are a familiar guarantee of thoughtful engineering and good construction; the performance and long life your dollars should buy. Pictured here are a few of the many items that make up the Buckeye complete line of Oil Burner Accessories.

No. 623 Flush Fill Box
Sturdy but light, cast iron body, brass lid. Made in 2" size for fuel oil installations.

No. 440 Vented Fill Cap
Heavy cast iron. Extension arm on body quickly locates cap for padlocking. Removable vented cap.

No. 628 Hinged Vented Fill Cap
Heavy iron. Used when fill pipe extends above surface. Hinged cap can be locked.

No. 714A Sludge Pump
All brass with malleable iron handle. Easy to operate at any angle without a foot valve. Expels about 1 pint per stroke.

No. 631 Double-Opening T Vent
Each opening has brass fire screen protected by a heavy galvanized hardware cloth.

For oil burner installations, Buckeye also makes foot valves, bushings, strainers, check valves and shut-off valves.

BUCKEYE IRON & BRASS WORKS, Dept. F
P. O. Box 883, Dayton 1, Ohio

VIKING··· THE TRUCK MOUNTING PUMP
FOR FAST, DEPENDABLE FUEL OIL DELIVERY

Saving time means saving money in the busy oil heating season.

The truck equipped with a rugged Viking pump is ready to give more and faster service to more customers. It is built for heavy duty. Available in 35, 50, 90, 200 and 300 gallons per minute sizes.

Rugged but compact, it includes such outstanding features as:

1. **Integral thrust bearing.**
2. **Extra long stuffing box.**
3. **Revolvable casing.**
4. **Double supported relief valve.**
5. **Pump operates in either direction.**
6. **Positive suction and discharge.**

These and many more features assure fast, dependable fuel oil delivery. Send for bulletin 1506EE today!

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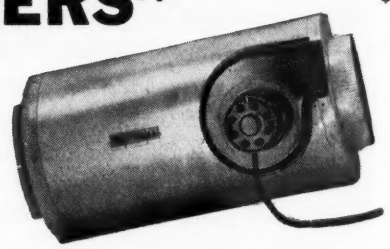
Viking PUMP COMPANY
Cedar Falls, Iowa

RAYFIELD "HEAT RECLAIMERS"

1. Low in price—fully automatic—easy installation.
2. Install on Boilers, Furnaces or Heating Stoves.
3. For use with ANY fuel—Coal, Gas, Oil or Wood.
4. Increases output of any Gravity Warm Air Furnace.
5. Heat Basements, Play Rooms, Attached Garages, etc.
6. The hotter the stack—the more heat reclaimed.
7. Positively saves wasted heat going up the chimney.



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C. L. RAYFIELD COMPANY 2010 SO. HALSTED ST., CHICAGO 8, ILL.

David B. Mills, manager, heating department, Knapp Supply Co., Muncie, Ind., wholesalers of plumbing and heating supplies, has distributed copies of a booklet commemorating the 75th anniversary of the company. It includes a brief history, recounting the establishment of the company by Alex A. Knapp in 1874 and contrasts the early days of the company when salesmen called on accounts in seven states to the concentrated territory covered today by nine salesmen within a fifty mile radius. Items stocked today, as compared with those carried years ago, also are cited to indicate changing trends in living and business activity.

John R. Lenox has been named manager of industrial relations and the personnel department, Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. Other changes saw *Sherwood M. Sitz,* director of industrial relations at the Minneapolis factories, promoted to director of industrial relations in a consulting capacity for the entire organization and subsidiary companies, and *George B. Benton,* former personnel manager, transferred to the company's expanded insurance department.

Frank P. Scully, Scully Signal Co., Cambridge, Mass., has announced that after August 1 Ventalarm fill signals will be standard equipment on all new Ford passenger cars.

Jacque L. Brown, formerly assistant sales manager of the heating and water system division, Heil Co., Milwaukee, has been named sales manager for Heil Automatic Htg., Inc., Milwaukee 6, Wis. This firm, an old and well established concern, handles Heil and Johnson oilburning equipment, Worthington and Fedders air conditioners. Mr. Brown's background includes engineering and sales executive experience with Perfex Corp., and Delco Appliance.

Thomas M. Sourbeck, manager, American Stove Company's division at Lorain, Ohio, has retired at the age of 73, effective October 1. Other personnel changes announced are: Resignation of *Stanley E. Little,* vice president in charge of sales, to become new manager of the Lorain Div.; election of *Marc W. Pender* to succeed Mr. Little; resignation of *George E. Baker* as treasurer because of ill health; election of *Clark P. Fiske* to succeed Mr. Baker; election of *F. Vern Semple,* former chief accountant, to succeed Mr. Fiske as assistant secretary and assistant treasurer; election of *Harold H. Gearhart* to the new office of controller and resignation of *Lloyd C. Ginn* as advertising and sales promotion manager.

Sarah Jones of the pump repair department, Sid Harvey, Inc., Valley Stream, N. Y., won the Nassau County individual high series women's C.Y.O. bowling tournament with a score of 516 and the high game prize with 214.

Albert D. Becker has been named representative for eastern New York, Vermont and Berkshire County, Mass., by L. J. Wing Mfg. Co., New York, N. Y. He will maintain headquarters at Albany, N. Y.

FITZGIBBONS

For 63 years, the right name in

STEEL BOILER HEAT

A.S.M.E. CODE CONSTRUCTED
HYDROSTATICALLY TESTED
HARTFORD INSURANCE INSPECTED
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Fitzgibbons Boiler Company, Inc. 101 PARK AVE. NEW YORK 17, N. Y.

For More Profitable Jobs

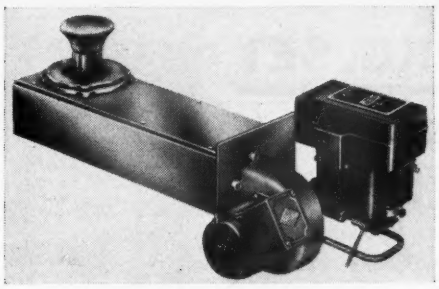
NU-TROJAN Combustion Chambers

A Product of McLeod & Henry Co., Inc.

A. R. WEBBER CO., INC.
DEPT 61
NEW HAVEN 11, CONN.

Nu-Trojan Chambers have the features that lower installation costs and reduce servicing costs to help you secure profitable jobs. Has few parts, does not need steel bands to hold them in place. First quality "Steel Mixture" Pennsylvania fire clay. Fusing point 3180° F. Write Dept. 61 for details.

EVERYTHING FOR THE OIL BURNER TRADE



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THE BURNER FOR LOWEST COST HEATING!

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KRES-KNO *Ball Flame*

VAPORIZING OIL BURNER

Low Initial Cost • Completely Automatic
Economical • Trouble-Free • Underwriters' Lab. Listed

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PALISADES PARK, N. J.
Kresno-Stamm Manufacturing Co., (Canada) Ltd.
1452 Drummond St., Montreal 25, P.Q. — Factory: Granby, P.Q.

Ralph Hooke, middle west regional manager, Timken Silent Automatic Div., Timken-Detroit Axle Co., Jackson, Mich., died in an Evanston, Ill., hospital on June 8 after a short illness. He joined Timken in 1931 as a district sales manager and took over as regional manager in 1937. He died at the age of 53 and is survived by his wife.

Howard C. Vaars has joined the sales staff of the Chicago district of Perfection Stove Co., Cleveland, Ohio. He will travel in various south Wisconsin cities, including Milwaukee, Madison and Beloit.

Henry W. Dodge has joined Mack Trucks, Inc., New York 1, N. Y., as executive vice president with responsibility for sales and advertising. He will make his headquarters at the company's main offices. Other recent appointments in the Mack organization were *J. G. VanNest,* named director of purchases for all plants, with headquarters at the Allentown, Pa. offices, and *Alfred H. Ranger,* named plant engineer, with headquarters at the Plainfield, N. J. factory. Mr. Ranger will make regular inspections of the company manufacturing plants and supervise plans for new buildings or alterations.

S. B. Withington, general manager, Lycoming and Spencer Heater plants, recently was elected a vice president of Avco Mfg. Corp., parent company. He became general manager of the Lycoming-Spencer Div., whose plants are located at Williamsport, Pa., in December 1948 and managed Avco's Republic Aircraft Products Division at Detroit during the war.

Frederick Boehm has advanced to the position of chief engineer, Schutte & Koerting Co., Philadelphia, Pa., industrial oilburner manufacturers. Mr. Boehm, who joined the company in 1930, has served as head of the Jet and Meter Departments.

D. F. Bennett, manager, Radiation and Unit Heater Sales, Warren Webster & Co., Camden, N. J., appeared recently as a guest on "The Mary Jones Program," a WFIL *Philadelphia Inquirer* station presentation. He was a guest of Mary and Howard Jones and was interviewed on the subject of Webster baseboard heating.

John J. Eibye has been appointed manager of magnetic component sales, Raytheon Mfg. Co., Waltham, Mass. As such he will be responsible for promotion and sale of various items, including transformers.

H. E. Strang, Schenectady, N. Y., engineering manager, Affiliated Mfg. Companies Dept., General Electric Co., has been appointed manager of the G-E Apparatus Department's Meter and Instrument Divs., Lynn, Mass. He succeeds *Nicholas M. DuChemin,* recently named assistant general manager of the department.

Ralph L. Sebrell, who will make his headquarters in Cleveland, Ohio, has been appointed representative for the Solder Seal line of plumbing and heating specialties made by Radiator Specialty Co., Charlotte, N. C.

ORAN

SHALLO-WELL

OIL-FIRED FLOOR FURNACES
Only 34 inches high
BTU CAPACITIES OF
★ 50,000 ★ 60,000
★ 70,000
Write for Details!

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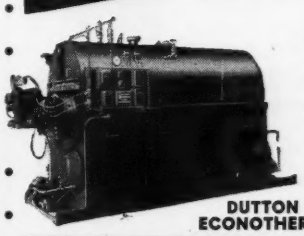
Dutton

AUTOMATIC PACKAGED STEAM GENERATOR

OIL AND GAS FIRED



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SAVE **on smoke stack cost**
SAVE **on fuel cost**

Exclusive Dutton features assure the finest in performance, economy and safety.

DUTTON ECONOTHERM

THE C. H. DUTTON CO.
625 Gibson St.,
Kalamazoo, Michigan

Dutton SINCE 1880

High and low pressure boilers for processing, heating or power. Sizes from 5 to 160 H.P.: 15 to 150 lbs. pressure.

fueloil / oil heat

McCORKLE 412 PKG. SET

A NEW LOW COST CONTROL

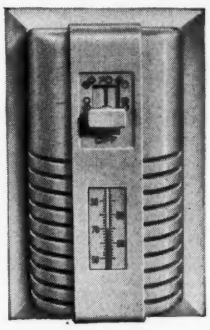
For Natural Draft Burners

Easy to install—just plug it in. No licensed electrician required.

Emergency operating lever—automatically resets.

Accurate dependable Thermostat with positive night cut off.

HIGH QUALITY—LOW PRICE



D. H. McCORKLE CO. Box E, Station A, Berkeley, Calif.

Heating Oil Responsibility

(*Continued from page 44*)

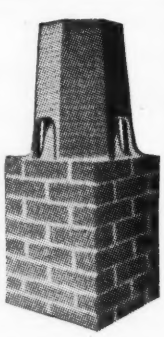
day above current production levels, and there is ample capacity to reach that figure if the requirement is seen in time. Crude runs of about 4,750,000 barrels appear to be required. That is about 475,000 barrels above current levels. There can be no question that the industry is capable of achieving those refinery totals. It has done so in the past for shorter periods of time, and can do so again for more sustained periods, conditional, of course, on allowing time to permit adequate preparation.

CHART II suggests that, based on the past two years experience of the industry, the crude production phase of next winter's supplies, may be the easiest to meet. The refinery runs may be somewhat more difficult. But the most difficult phase of the program indicated for the coming winter is in the adjustment of yields. Gasoline yields, now averaging around 48%, can be readily reduced to the 42% indicated. There does not appear to be a large adjustment necessary in the residual yield, or in the yields of miscellaneous products. The combined yield of the total middle distillates, however, (currently slightly over 20%), presumably must be increased to exceed 28% as an average for the six winter months. The 28% to 28½% yields must at times be exceeded, unless yields of the middle fractions have attained those levels at the beginning of the fourth quarter, which is doubtful.

In the winter of 1947-48, the combined yields for middle fractions got as high as 28.4% in the month of January, reached a record 29.9% in February, and then declined to 27.8% in March. But that resulted from the inducement of a very much more profitable price structure on middle distillates relative to gasoline than now exists, and from pressure of Government and industry committees. Surely the industry does not want,—and should not risk—a return to these compulsions in the burning oil market during the coming winter. There is no reason why it should expose itself to those risks, and no necessity for doing so, if the situation is foreseen in time and adequate preparations are made.

The situation in the latter part of next winter may be difficult even with normal weather. Should the winter be somewhat colder than normal, it would be worse. Separate estimates of the effect on demand of a winter averaging 10% colder throughout, and of a winter averaging 10% colder from the middle of December to the end of February, have been made and the results interpreted in terms of ultimate requirements against supplies. These cases are also shown in CHART II. The first case would require about an additional 100,000 barrels of crude a day. That should cause no trouble. It would require about 100,000 barrels a day of additional refinery runs. That would be more troublesome but is probably possible. But it would also require middle distillate yields throughout the winter averaging better than 30%, and that would cause trouble. It would represent a very heavy strain on the refiners even if the average yield did not have to be exceeded as the result of a slow start in getting middle distillate yields up in October and November. Even in the intermediate position, where it is assumed that 10% colder weather begins the middle of Decem-

"VENTURI" CHIMNEY CAPS



- Cure Down-Draft and insufficient draft troubles.
- Used extensively on Gasoline Service Stations and Other Low Buildings.
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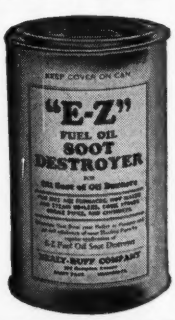
E-Z Fuel Oil Soot Destroyer will clean many thousands of oil-fired furnaces this Summer. Its speed (one application does the job), its thoroughness in eliminating all soot, its safety and low cost per job, make E-Z a big profit item. (Good for fuel oil soot only.) Keep a 5 lb. Can in each service truck, always. Stock the 1 lb. Can for direct sale to customers. If your Distributor cannot supply you, order direct.



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THE GORTON SYSTEM of VAPORIZING and EQUALIZING existing steam heating systems for automatic heating provides automatic heat distribution . . . The flow of vapor to all radiators is automatically controlled so that rooms farthest from the boiler are heated as quickly as those near the boiler . . . NO PIPING CHANGES ARE REQUIRED.

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ber and is over by the end of February, the situation would be difficult.

These supply figures represent the kind of distortions that must inevitably occur when the major burden of adjustment to the seasonal variation of the oil business, is placed on any one of the three adjustable factors (1) total production, (2) refinery yields or (3) stock changes. The supply data confirm the difficulties which the industry must be willing to accept if, during the summer period, there is a failure to make adequate storage provision. That is exactly what is happening today.

The immediate problem is to see the situation clearly in terms of its several contributing factors, and to prepare promptly for next winter. If this is done, the difficulties discussed above need not materialize. The long term problem is to recognize that greater seasonal variation has come into the post-war oil business, and to become accustomed to looking at higher summer inventories of burning oil as something to be desired, rather than as a cause for concern. That would require the industry to provide more storage at all levels of distribution.

Oilheating Trends

(*Continued from page* 11)

year. Again, there is a wide diversity of predictions. New England dealers expect gas to be up 11%; those in the Mid-Atlantic area look for a 7% pick-up; those in the Midwest believe that the gas industry will install 35% more jobs than last year and those on the Coast expect a 2% rise.

The reporting dealers have fairly definite ideas about the relative cost of gasheating versus oil in their communities. Combining all of their opinions gas apparently costs about 18% more than oilheating, nationwide. This figure is of little significance, however, since any dealer is concerned only with how it looks at home. New England dealers as a group estimate that gasheating costs 24% more than oil; those reporting from Mid-Atlantic markets find gas on the whole to be 31% more costly; those in the Midwest collectively report gas 7% cheaper than oil while those in the Pacific Northwest rate it as 25% more expensive. The Midwest figure is again of little use in the overall since there is a great difference between cities having manufactured or natural gas. The general pattern would indicate that natural gas markets have about a 28% cost advantage overall . . . in other words gas is that much cheaper. Manufactured gas in Midwest cities, is estimated by the dealers to cost 33% more than oil.

BURNER FIRING RATES: Nearly half of all oilburners and units being installed this year have firing rates between one and one and a half gallons per hour.

Firing Rates of 1949 Installations

	New Eng.	*Mid Atl.*	*Mid West*	*Pac. N. W.*	*All Sec.*
.74 gph or lower	6.2%	3.1%	29.0%	neg.	11.2%
.75 to .99 gph	13.0	9.4	13.3	14.1%	11.8
1.00 to 1.49 gph	56.5	37.4	36.8	59.3	43.1
1.50 to 1.99 gph	16.3	24.9	15.0	11.1	18.8
2.00 to 2.99 gph	4.3	11.9	2.9	12.7	7.8
3.00 to 4.99 gph	1.1	6.5	1.5	0.1	3.3
5.00 to 9.99 gph	1.0	3.7	0.8	2.7	2.2
10.00 gph and over	1.6	3.1	0.7	neg.	1.8

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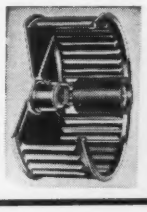

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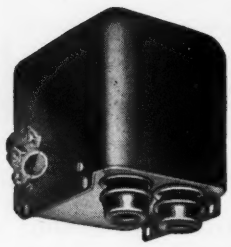

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There is considerable geographic variation, with the Midwest getting the smallest average burner sizes and New England the largest. The table shows the per cent in each size bracket by sections.

DEALER COMMENTS: Typical of the dealer comments on questions of the month are these: . . . "We are filling our storage now, also customers' tanks at 9.5¢; we have had to resort to some gas installations to keep going" . . . "Would like to see better controls made; we must replace too many on new jobs. . . . "Oil furnace business is extremely competitive even though we have bought out two competitors" . . . "The price of stove oil went up again the first of July while all of our customers think that oil prices should be down" . . . "Something is wrong with No. 5 oil in this area; customers are complaining so much that we have stopped installing" . . . "We are not going to buy more than a week's supply of oil until the falling market settles" . . . "Burners are too high in price to sell many in a community with 20,000 unemployed" . . . "Gas competition is stopped in Baltimore but the local gas company has applied for natural gas which will probably be in here at somewhat lower rates by late 1950" . . . "It is poor business on our part to buy and pay for oil to fill our storage and wait until fall to sell it; the money is worth something and insurance is expensive" . . . "Gas companies compel builders to install gas heating equipment in many of their homes; otherwise the builder pays for all gas piping. . . .

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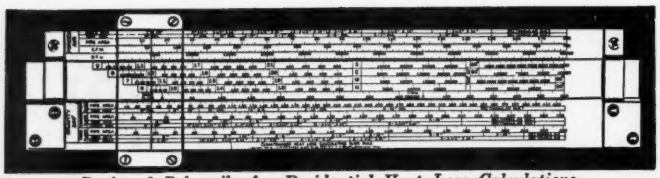

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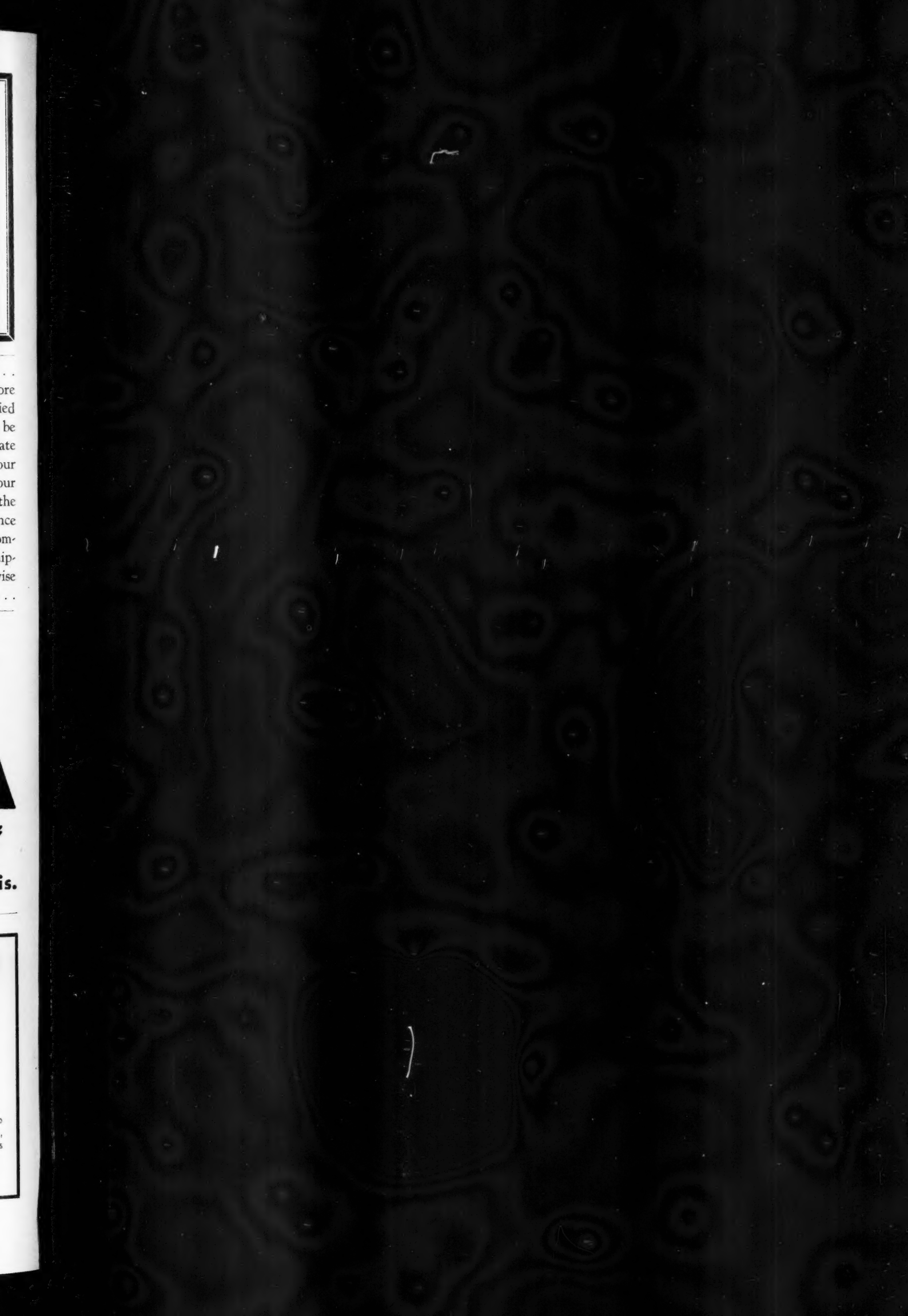
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